How Many Feathers for the War Bonnet? A Groundwork for Distributing the Planning Function in Objective Force Units of Employment

A Monograph
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Abstract

How Many Feathers for the War Bonnet? A Groundwork for Distributing the Planning Function in Objective Force Units of Employment by Lieutenant Colonel M. Scott Weaver, US Army, 66 pages.

Planning is the crystallizing of the *Will* to act. In its minor functioning, planning results in decisions. In its major functioning, planning results in a set of decisions that constitute a plan. As a function, planning is an ordering of decisions. In the Objective Force, planning will support *mission command*: operations conducted "through decentralized execution based on mission orders…." The **planning function** is not identical with *the planning process*, a term that organizations commonly use when referring to their formal problem-solving methods for performing the planning function. Several procedures are possible.

The US Army is only starting to analyze the best way to echelon functional competencies within the Objective Force. Its formations will work almost exclusively within a Joint Operations framework. In coalitions, alliances, and partnerships the **joint-by-design** Objective Force will "fulfill a variety of strategic, operational and tactical purposes."

The distribution of the planning function for the Unit of Employment headquarters must normally support functional planning in *Concepts of Operation* and detailed planning in *Concepts of Support*.

As part of the body of work called for in the "Concept for the Objective Force," this monograph aims to establish the groundwork for experiment and determination of both the optimal distribution of the **planning function** between Objective Force echelons and for designing planning methods that generate *adaptive dominance.*

The monograph gains insights from historical analysis and analyses the implications of desired Unit of Employment capabilities, other operational concepts, and descriptions of Objective Force command and control. From this follows organizational concepts for distributing the planning function between the Unit of Employment and its higher headquarters. The proposed organization integrates insights from the historical cases with anticipated technological capabilities in the Objective Force.

The continuing elaboration of military headquarters into over-towering headpieces prompts the war bonnet metaphor in the monograph title. The members of the general staff, supporting, and administrative personnel within a flag-level headquarters are like feathers in a war bonnet. The Army can continue adapting current headquarters structure and general staff organization or it develops new ones. Present field army, corps, and division headquarters structures and general staff organizations evolved from 19C solutions to the challenge of controlling mass armies operating within a continental theater of operations. How should the **planning function** be distributed between an UE and its Higher Headquarters (HHQ)—Joint Task Force (JTF), Standing JTF, or Land Component Command (LCC)? This monograph starts to answer that question.

The monograph answers this question through a historical analysis of the planning function during the century of Industrial-age warfare—1870 to 1970. The subjects for analysis will be the major operations of campaigns during the Great Sioux War of 1876-77, the German conquest of Europe in 1940, and the US 1967 offensive in South Vietnam. The major operations of these campaigns demonstrate ideas present in the Objective Force Concept.

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CHAPTER ONE

INTRODUCTION

I. Overview of the Problem

Objective Force Design and Distribution of the Unit of Employment's Planning Function

The 21C will see the United States continuing to project military power worldwide. The Army's Objective Force must dominate opponents in traditional and alternate modes of warfare, conducting campaigns and operations that contain within them the full spectrum of conflict. Land power formations will go straight into battle having maneuvered from the continental US to the furthest reaches of the earth.

The US Army is only starting to analyze the best way to echelon functional competencies within the Objective Force. Its formations will work almost exclusively within a Joint Operations framework. In addition, Army elements and formations will operate beside, in support of, and in cooperation or coordination with various domestic and international "political, military, interagency, and non-governmental actors."[1] In these coalitions, alliances, and partnerships the **joint-by-design** Objective Force will "fulfill a variety of strategic, operational and tactical purposes."

Consistent with the emerging framework for discussing the Objective Force, *TRADOC 525-3-0 (DRAFT)*, dated November 2001, identifies two "Unit of Purpose" echelons: **Units of Action** and **Units of Employment**. "Units of Action are the tactical war-fighting echelons of the Objective Force." Units of Employment are the operational command and control echelons of the Objective Force. The envisioned **Common Operating Picture** will support tactical decision-making and provide the means for *intent-centric execution* in the operational-tactical dynamic between Units of Employment and Units of Action. This command mechanism must also be

[1] U.S. Department of the Army, "Concept for the Objective Force," *White Paper* (U.S. Army Chief of Staff. Washington, D.C.: November 8, 2001), 17.

adaptable to various functional component and Joint Force Command roles to support operational-level decision-making and provide the means for execution in the strategic-operational dynamic between Units of Employment and higher headquarters.

The Unit of Employment role requires that the Army determine how to reorganize its headquarters echelons. The 21C challenge is to control precision force package formations operating within a global theater of operations. The Army either continues adapting current headquarters structures and general staff organizations or it develops new ones. The present echelons of field army, corps, and division headquarters structures and general staff organizations evolved in the 19C, as solutions to the challenge of controlling mass formations operating within a continental theater of operations.

By the 1850s, operations were of such scope and complexity that militaries distributed the **planning function** between commanders and their general staffs, evolving the general headquarters into a *team mind*. The size of formations, in their scores of thousands, and the distances over which they fought combined to place the operations of armies beyond commanders' physical field of view and capacity to command and to control through personal action. The technical details of moving and sustaining corps and armies exceeded the **planning capacity** of solitary individuals, no matter their brilliance. So did the details of maneuvering formations in major engagements. All nations that fielded mass armies eventually adopted the Prussian general staff model for control: a *team mind* that generates a **corporate understanding** through planning and that propagates it through echelons by plans and orders.[2]

Within a *team mind*, a commander supplies the initiative, direction, integration, and criteria while the staff performs the "*clerical* or *mechanical*" technical thinking.[3] The bulk of planning consists of such thinking, which involves finding and organizing information to support

[2] *Corporate understanding* conveys the commonality of perspective that planning ideally produces. See Chapter Four for a further discussion(at page 71).

[3] J.C.R. Licklider, "Man-Machine Symbiosis;" available from http://www.kurzweilai.net/meme/frame.html?main=/articles/art0367.html; Internet; accessed 02/19/02.

"determining the logical or dynamic consequences of a set of assumptions or hypotheses, preparing the way for decision or insight." Staffs perform this technical thinking to exponentially increase the "thinking time" spent on a problem within an available period. Their efforts also free thinking time for commanders so they may make timely, "rapid (in seconds) determination(s) of the answer sought." Thus, a *team mind* constitutes an intellectually extended person.

Commanders and the members of their general staffs, supporting, and administrative personnel within a Unit of Employment headquarters will comprise a *team mind*. A modern US Army corps headquarters includes 500 personnel in its war fighting staff, and with equipment, even its forward headquarters can consume 1.5 days worth of C-17 available lift. Unit of Employment headquarters should use far less lift.

The US Army has an opportunity to develop new headquarters structures and general staff organizations based upon the role of the Unit of Employment and its command and control (C2) functions. Planning is an essential part of C2, but Objective Force discussions thus far backhandedly address the planning function. How should the US Army distribute the **planning function** between a Unit of Employment and its higher headquarters—Joint Task Force, Standing JTF, or Land Component Command?

II. Overview of the monograph structure.

Analyzing both the planning function distribution between Units of Employment and higher headquarters in past major operations of campaigns and the Objective Force Operational Concept, this monograph starts to answer the above question. It establishes the groundwork for experiment and determination of effective distribution of the planning function between Objective Force echelons and for designing planning methods that will generate *adaptive*

dominance.[4] This monograph also proposes an organizational design for distributing the planning function in the Unit of Employment headquarters.

Chapter Two invites readers to analyze the planning activity itself within the command process of ***planning-preparing-executing-assessing***. It has two parts. Part one seeks to capture the imagination by visualizing the planning of an operation in 2034. Part two involves formal analysis of the planning function. This provides both the criteria for historical analysis and a potential set of parameters for design and experimentation in testing distributions of the planning function in the Objective Force.

Chapter Three is a historical analysis of the planning function in three instances during the century of Industrial-age warfare—1870 to 1970. The subjects are major operations during the Great Sioux War of 1876-77, the German conquest of Europe in 1940, and the US 1967 counter-offensive in South Vietnam. These major operations involved essential operational elements of the Objective Force Concept.

Chapter Four reviews insights from the historical analyses, and analyses the implications of desired Unit of Employment capabilities, other operational concepts, and descriptions of Objective Force command and control. From this follows a proposed organization for distributing the planning function between the Unit of Employment and its higher headquarters for experimental testing. The proposed organization integrates insights from the historical cases with anticipated technological capabilities in the Objective Force. The distribution of the planning function for the Unit of Employment headquarters must normally support functional planning in *Concepts of Operation* and detailed planning in *Concepts of Support*.

Appendix 1 addresses two features of operations in the selected historical campaigns that are relevant to the anticipated full spectrum employment of the Objective Force. First, they illustrate the constant size of commanders' subjective battlespace—that mental space in which

[4] Adaptive dominance is adaptation to changing patterns of enemy operations faster than enemy can exploit them. *TRADOC PAMPHLET 525-3-0: The U.S. Army OBJECTIVE FORCE Operational and*

commanders visualize an operation—despite technology repeatedly expanding the physical battlespace throughout the 19C and 20C. Second, they each involved simultaneous, full spectrum operations.

Appendix 2 discusses planning in the future. It also outlines a planning methodology for supporting intent-centric execution. The concepts presented in this appendix resulted from the monograph author's reflections on campaign planning in the Great Sioux War and the re-sequencing of offensive operations in Vietnam.

Organizational Concept (Draft 1 NOV 01), (US Army TRADOC Command), 11.

CHAPTER TWO

A FIRST LOOK AT PLANNING IN THE OBJECTIVE FORCE

I. Planning an Operation: a Unit of Employment in 2034.

Planning is about visualizing the unfolding of the future. Assume the Army transforms into the Objective Force, with the full suite of desired capabilities. Behind the non-linear, non-contiguous, distributed operation—happening simultaneously throughout the battlespace—is the planning that supports its intent-centric execution. Below is what military planning could look like for a Unit of Employment in 2034.

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Brigadier Diennes, Commanding General, 101st Unit of Employment (UE) during OPERATION BUGHUNT, died on the high ground in the Battle of Java.[5] Half the 3rd Unit of Action died with him in that fight against the 90th Legion, Empire of New Zealand. Colonel Loki was evacuated along with the remnants of the 4th Unit of Action. He had been one of the architects of BUGHUNT.

Two months after BUGHUNT, Brigadier General Loki took charge of PCO—Plans, Command, and Operations module——Able, 101st UE. He established the PCO module with 3rd Unit of Action (Army) on board the Land-power transport *Corregidor* because the campaign plan had that Unit of Action spearheading a follow-on operation. Also, 1st Unit of Action (Army) and 5th Unit of Action (Marine) were both tasked as separate **Land-power Force Packages** in other **Joint Expedition Forces** that were already conducting shaping operations for OPERATION RAPTOR.

In planning OPERATION RAPTOR, the Land-power portion of PCO Able incorporated the 3rd Unit of Action (Army) planning staff, selected from among its commanders. The Unit of

[5] Scenario based upon the OPERATION ROYALTY narrative in Robert Heinlein, *Star Ship Troopers* (New York: Penguin Putnam, 1987, G.P. Putnam's Sons, 1959), 202-224.

Action commander became the Chief of Staff, 101st UE. The Sea-Air Power Battle Force organized for planning with the senior ship's captain in Sea power Battle Force-6 and the senior colonels in both the Air-power 25th Wing Battle Force and the Land-power 3rd Transport Group. This group linked in with the Sea-Air power portion of the PCO Able.

All together, this brought the PCO module to seventeen officers for planning. From the Department of the Hemisphere CINC-level to the Unit of Employment level, just two echelons did the strategic-operational planning for OPERATION RAPTOR.

PCO Able had fifty hours to make a good idea into a fully integrated Operations, Support and Deployment Plan, and to request apportionment of the Joint forces effects it needed. Execution began immediately afterwards, sixty-six hours from alert and notification to begin planning. While remaining at their diverse locations on Earth and in orbit, the planners linked up in the virtual planning space, which started off looking like an Italian bistro (Brigadier Loki had an odd sense of humor).

There, they began working on OPERATION RAPTOR with a clear understanding of the ultimate aim: to destroy the 90th Legion, ENZ. This was one step in the on-going campaign to take the war back to Wellington and force the Empire of New Zealand to accept a peace. Brigadier Loki introduced the project to the 101st UE planning staff by reviewing the campaign. The general nodded and the planning space became dark.

The virtual room contained a single glowing strand of light. Pyramids were spaced along it at unequal intervals. This was the **line of operation for the campaign**. At the far end of the strand, the rear admiral touched a cube—the campaign endstate—and the planners heard "New Zealand agree to terms of peace offered by the Americas Coalition." He then touched the strand before it entered the cube; "New Zealand forces occupying Australia and the Philippines defeated and ENZ offensive military capability (90th Legion) destroyed." This was the **effect** caused by the event represented by a green pyramid. When the Chief of Staff touched it the planners heard, " Coalition Combined Force attacks Sidney, Australia to eliminate ENZ's robotics production

capability." That is where all efforts in this military campaign lead. Robotics production capability is the critical vulnerability: destroy the capability to produce the robots controlling their aircraft and naval vessels and the 90th Legion can be annihilated without hope of regenerating it any time in the next fifteen years.

By touching the various sides of a pyramid, a planner could reveal the different aspects of the situation and the nexus of relationships between things and events. Touch the bottom and the room revealed the relationships of **space-time** and the strands running from prior and supporting events-—military operations, increases or decreases in resources, diplomatic ventures—and the strands running to later and supported events. Touch the side of a pyramid and the **probabilities aspect** showed a different set of relationships. Touch another side and a planner saw the **moral aspect** set of relationships. When a planner touched the top of a pyramid, it showed the cumulative effects of the aspects: the links between predicted sequence things and duration of events as they linked together and would probably unfold in time and space.

The Common Operating Picture continuously updated the outcomes of ongoing events—successes or failures—and added forecasts of their effects on the campaign into the current planning situation. A darkened pyramid of OPERATION BUGHUNT was on the abandoned original **line of operations**. The pyramids representing ongoing events had two **lines of effects** growing out of them—most likely outcome and most dangerous outcome—which planners could toggle between to judge impacts.

Brigadier Loki took the pyramid for OPERATION RAPTOR in both hands and pulled it open. Around the planning staff, the darkness with the campaign plan dissolved, replaced by the bare framework of the operation hanging free in a disorienting white space. At one end was the cube representing the approved endstate: "senior programmer captured alive and under interrogation." At the other end was the approved mission. "Between 01 and 04 August 2034, **Joint Expedition Force 101st UE** attacks to seize alive a ruling software engineer of the Pacific Rim Hegemony, to enable locating of vulnerabilities in the Empire of New Zealand's robotics

industry." Next to the mission were icons representing the forces available for planning and their availability windows, along with general indications of each unit's follow-on mission. The Department of the Hemisphere General Headquarters (DHGHQ) estimated the operation at five days duration from the initial assault through the final withdrawal of forces.

The chief of staff nodded and two Earth quadrant models containing the southwest Pacific appeared beneath the operation framework. One modeled Singapore, the other Tokyo. Each was an ENZ allied city-state that we could attack within the specified time window. The travel time between Corpus Christi and the nearest ENZ outposts was part of the simulation. Linked to each model was the deployment-to-concentration travel time for the available forces, their availability duration for the operation, and their anticipated departure track for follow-on operations.

With a nod, Brigadier Loki granted permission for one of Land-power planners to assume the lead. She reached out and closed her fist around Tokyo. The city and surrounding areas became a terrain model in front of the planners. The operation framework hung far overhead. This bird's eye simulation of Tokyo showed the known and predicted locations of ENZ software engineer activity.

The planners could manipulate the simulation to see the situation estimate for Tokyo on 01 August 2034. Then they could take the simulation backwards in time to the present moment and also run it forward to estimate ENZ reactions to the different things the Expedition Force might do to accomplish the mission. All the geologic, terrain, and weather data about the Tokyo region were also at the planners' fingertips. Everything the Joint War Department knew about the ENZ military went into the simulation as an estimate of how the 90th Legion was protecting the robotics design facilities in Japan.

The planners began developing courses of action after agreeing that isolating the Japanese islands and isolating the likely software engineer locations was a basic economy of force requirement. PCO Able formulated three concepts. To do this, one of the planners picked up

a formation icon, selected a task from its tactical menu, anchored its start point, and then tracked its axes to its objective(s).[6]

A planner dictated the purpose for the formation after marking its objective, which amounted to the effect sought. The simulation then proposed a mission statement for the formation that he approved or edited. Task organizing was a matter of cracking a unit open like an egg and sorting its elements into the needed capabilities. If a planner assigned a mission, or it included an implied task beyond the capacity of the formation's organic force packages, then he received a recommendation on needed force enhancement modules. Once built, a course of action was available for playback as an integrated multidimensional and narrated cartoon.[7] Any planner could review it from friendly or enemy shooter perspective, or from friendly or enemy command perspectives—with a choice of command levels.

Once constructed, the planners ran each course of action concept as a wargame. Multiple runs gave a good intuitive feel for what might happen instead of generating a script to follow. The simulation presented them with the 90th Legion's predicted most likely and most dangerous responses. The planners used the simulation to refine missions and force dispositions, thus creating the best probability of success.

For instance, they wargamed forward to a D+3 culmination against the 90th Legion's most dangerous response and then went back to adjust the initial target sets and objectives. That created intelligence and sustainment disconnects at D+4, which they then corrected by making necessary adjustments at D-7. Each wargame showed them ways to generate options for the commander that the planners incorporated into the next run.

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[6] Ed Swan; available from http://www.ait.nrl.navy.mil/vrlab/projects/Dragon/Dragon.html ; Internet; accessed 02/22/02; David Tate, "VR in the Field: Hunter Warrior & JCOS/MCM Situational Awareness Using the Virtual Reality Responsive Workbench;" available from http://www.ait.nrl.navy.mil/vrlab/projects/Dragon/Dragon_Hunter_Warrior_JCOS.pdf; Internet; accessed 02/22/02.

[7] Harry E. Jones, II, "Information Dominance for Army XXI: Battlefield Visualization;" available from http://www.fas.org/irp/agency/army/tradoc/usaic/mipb/1997-1/jones.htm; Internet; accessed 02/22/02.

From this effort, the planners gamed out two fully workable operational-tactical concepts for accomplishing the mission against Tokyo. They developed functional plans later, but within four hours knew how many Units of Action and the size of Sea and Air Battle Forces were needed to do the job and have sufficient reserves to meet the unexpected. When they wargamed through the concepts against Singapore, the force requirement was lower and the probability of success was higher.

The operational-tactical and strategic-operational estimates both favored Singapore. The strategic-operational planning involved deployment: developing the routing and schedule for concentrating the Land, Sea and Air forces that would constitute Expedition Force for OPERATION RAPTOR. It also included integrating the concept of support: resupply and sustainment. Finally, it fixed the line-of-command relationships and generated the 101st UE's operational-tactical execution time-windows.

Tactically, conducting a cross-planet raid against Singapore provided more flexibility in both the start and the duration of the operation, and provided for better operational-tactical freedom of action in fighting the 90th Legion. Strategically, concentrating the force took less time because the distances involved were shorter, based upon the H-16 locations of the other Joint Expedition Forces. Making the raid against Singapore also increased the availability of the units for ongoing and follow-on operations. The recommendation to the CINC focused upon: (1) probability of success, (2) forces required and estimated losses, (3) strategic-operational freedom of action, and (4) supporting operations required to isolate Indonesia and to gain intelligence.

Brigadier General Loki briefed the plan to the CINC at the forty-six hour mark. Planning space has no real limits on the number that can attend a briefing because everyone can be in the front row. Several people occupy each place, but a briefer only interacts with those attending on an active phase allocation. Any one else authorized to attend gets a passive phase allocation and appears as part of a gallery in the background. The CINC's sense of humor about the virtual

planning space was odd, too—Brigadier Loki stood like a gladiator on the floor of the ancient Roman Coliseum.

The Brigadier quickly briefed the orientation of OPERATION RAPTOR within the scheme of the campaign, along with the existing operations it leveraged for support and the one new shaping operation it required. He fixed those operations in a global projection broad enough to encompass North America and the Southwest Pacific, and then zoomed in on the Singapore quadrant. He talked through the effects of the shaping operations. They set the conditions for RAPTOR by isolating Singapore for seven days.

3rd Transport Group and 25th Wing Battle Force would drop from a High orbit and concentrate over Antarctica, two hours cruising time from Singapore. The Wing and Sea Battle Force-6 would isolate Singapore and enable 101st UE's three-Unit of Action vertical assault from the Transport Group. These three Units of Action would each invest and reduce a likely software engineer location. A fourth Unit of Action (Marine) would remain over the horizon near Sri Lanka prepared to defeat 90th Legion counter-attacks and maintain the isolation of the objectives. Having captured a software engineer, 101st UE would withdraw from Singapore and the Expedition Force would release the Units of Action for other operations. The CINC approved the concept.

Planning continued throughout execution. Once the CINC approved the concept, the *Corregidor* launched into orbit from Corpus Christi on 30 July 2034. PCO Able's planning work in orbit focused on adjusting to the effects of ongoing operations and to the intelligence on Singapore generated by shaping operations. Once in orbit over Antarctica, PCO Able collaboratively supported subordinate units' planning.

The intelligence efforts had replaced the initial estimate of the 90th Legion activity and dispositions with hard information. The 3rd Unit of Action members with PCO Able took the lead in air-ground tactical planning. The 3rd Unit of Action and the other UA and Battle Force staffs did detailed planning for the vertical assaults and functional planning for ground sustainment

operations. PCO Able was busy wargaming D+2 through D+5 with DHGHQ, revising and generating additional options for the commander.

Once the attack was launched at 01 0300 August 2034, the bulk of PCO Able's planning effort focused on adjusting actions within the next twenty-four hours to exploit opportunities boiling up out of the current fights. Brigadier Loki was on the ground or in the air with the Land-power intelligence officer, while the rest of PCO Able was in orbit on the *Corregidor.* Through his Common Operating Picture *uplinks*, the planners could see, hear, and smell whatever Brigadier Loki wanted to share from the battlefield. He could enter planning space through the Common Operating Picture *downlinks* for a quick update while keeping his physical feel for the fight.

The planners of PCO Able generated options and recommendations for Brigadier Loki, together spending amounts of time and mental and emotional energy unavailable to a single person. They uncovered options eight and fifteen hours into the future that the Commander, 101st UE counted on them to provide. The planners also integrated adjustments by continuing collaboration with the CINC's headquarters at Corpus Christi.

For this operation, the liaison 101st UE planning module to DHGHQ was PCO Charlie. This planning module played the ramifications of Brigadier Loki's adjustments forward out to 120 hours, in collaboration with a DHGHQ planning team. PCO Charlie pushed down conceptual or functional plans for branches and sequels that were likely to be needed thirty-six to forty-eight hours in the future.

As it turned out, there was no D+4 or beyond. The 101st UE captured a software engineer on D+2 and a second one on D+3 while cycling the 6th Unit of Action into the operation. Once the Joint Expedition Force was clear of Singapore, DHGHQ issued follow-on orders for all units. PCO Able returned to Corpus Christi aboard 5th Unit of Action's *Tora Bora*. It completed its After Action Report en route, and on 06 August 2034 became the liaison 101st UE planning

module to DHGHQ, which supported PCO Baker, 101st UE as it commanded OPERATION ROUNDHOUSE.

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CRITERIA FOR HISTORICAL ANALYSIS AND PARAMETERS FOR OBJECTIVE FORCE DESIGN AND EXPERIMENTATION

II. First set of criteria

The five elements constituting the planning function.

Planning is a constant, daily activity so inherent in living that the capacity for it is an essential quality of rationality. It is present in the actions of making a lay-up in basketball, shooting a goal in hockey, and making a left-hand turn while driving. It is also present in constructing a building, making investments, and preparing a meal. In these examples, an individual can do the planning because the combination of complexity and time-to-decide allow it. Complexity and lack of time make individual planning of military operations difficult at echelons above company.

Military planning involves forethought and preparation that enables the performance of complex activities in chaotic situations, especially those highly interrelated activities that require time and effort to accomplish their intended effects. Current US Army doctrine uses the *Troop Leading Procedure* and the *Military Decision-Making Process.* In the Objective Force, planning will support *mission command*: operations conducted "through decentralized execution based on mission orders…." Planning remains necessary, even if a combination of technology and organizational changes alters military problem-solving methods and processes.[8]

Planning involves the desire or need for action to alter or preserve a situation and by necessity takes *the future* as its matter. It is the crystallizing of the *Will* to act. In its minor functioning, planning results in decisions. In its major functioning, planning results in a set of

[8] U.S. Department of the Army, *Field Manual 5-0: Command (Draft)*, par. 1-5, 1-2; par. 1-8, 1-3; *viii*.

decisions that constitute a plan. As a function, planning is an ordering of decisions. As such, planning aims at those effects consequent to events and activities, themselves triggered by decisions sequenced or ordered with the anticipation of causing the effects. The **planning function** is not identical with *the planning process*, a term that organizations commonly use when referring to their formal problem-solving methods for performing the planning function. Several procedures are possible.[9]

Consider planning as a function, as opposed to a process, performed by militaries, businesses and other organizations. This distinguishes it from the staff systems evolved as a control response to industrial-age mass armies, conceived as military machines. Abstracted from particular processes and methods, the **planning function** consists of five interrelated elements: **visualizing**, **anticipating**, **forecasting**, **sequencing**, and **adjusting**.

Visualizing is the central element of planning and decision-making. As part of the planning function, **visualizing** allows an understanding of how things will go by mentally projecting a situation forward in time.[10] The effects of different **sequences** of events and activities are **anticipated**through **forecasting** the outcomes in a variety of combinations, which result from mentally **adjusting** the order and relationships between events and activities. Visualization is a continuous process, recurring as decision becomes action and a situation's actual events unfold in pursuit of a desired endstate.

Anticipating provides the subject matter of **visualization**. It involves the forethought and preparation necessary to enable timely action—in complex, interrelated activities and decisions that require time-consuming effort.[11] As part of the planning function, **anticipating** involves a subjunctive—*what-would-happen-if*—analysis. Done well, it allows positioning to exploit foreseen opportunities and thereby generates increased freedom of action. **Visualization** is

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[9] *Sound Military Decision*, 21; FM 5-0, 1-1; Henry Mintzberg, *The Rise and Fall of Strategic Planning: Reconceiving Roles for Planning, Plans, Planners* (New York: The Free Press, 1994), 7, 11-12, 15.

[10] FM 101-5, 1-3; Ibid., par. 1-28, 1-7.

inherent in the act of anticipation, which begins by supposing a situation exists and then mentally playing forward the **sequence** of actions or events under consideration in time to predict the effects that *could* result. That prediction is a **forecast** and it may change based upon **adjustments** to the mental sequencing of the actions or events under consideration.

Forecasting is an estimate process. Forecasts are best guesses, based upon underlying assumptions—one of which is that past experience is a reliable guide to the future. The danger inherent in forecasting involves treating presumptions about the future as facts. This is the tendency common wisdom warns against when counseling not to count the chickens before the eggs have hatched.

The estimate process involves assessing the quantitative aspects of the **visualized** effects. As part of the planning function, **forecasting** is a dual estimate involving both a probabilistic and a quantitative analysis that takes **anticipated** situations plus **sequences**-of-actions-or-events sets as its subject.[12] The probabilistic analysis involves estimating potential effects or outcomes associated with action-or-event sets as having some condition of *certainly*, *likely*, *unlikely*, or *no chance.* The quantitative analysis factors into those conditions binding events or activities and the action-or-event sets an estimated *amount, number*, or *duration*, which are part of the effects or outcomes. Numbers appropriately formalize the probabilistic component of the analysis through *percentages* or *odds* when experience provides a quantified data set of similar situation-plus-**sequence**-of-actions-or-events for comparison.

Sequencing involves arrangement of events, activities, and objects, within relationships in time and space. Events and activities happen either ***simultaneously*** or ***serially*** in time, and link to one another in relationships of *concurrent, before*, *during*, and *after.* Events and activities also happen somewhere in space, and link to one another in relationships of *in front, behind*, *beside* (to the left or right), *between, above*, and *below*. These same relationships link objects—such as

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[11] FM 5-0, par. 1-8, 1-3.
[12] FM 5-0, par. 1-69, 1-14.

people, places, and things—to one another in space. As part of the planning function, **sequencing** different sets of events, activities, and objects and **adjusting** the order and relationships between set members occurs through **visualization**, which mentally tests for satisficing sequences by **forecasting** particular effects and **anticipating** outcomes.[13]

Adjusting is the process of alteration and substitution. As part of the planning function, **adjusting** the **sequence** of events and activities, and of the relationships between them, allows the **forecasting** and **anticipating** actions in **visualization** to occur. During the execution of a plan, ***adjusting*** is the active element of the planning function, which operates in tandem with the continual process of visualizing. *Execution* is acting to influence events and direct activities so their effects aggregate into a set of circumstances approximating the visualized end-state, which is the aim. Some adjustments result from poorly anticipating and forecasting how a situation will unfold. Other adjustments result from unanticipated and unforecasted events and effects. The magnitude of the effects resulting from the alterations and substitutions that constitute a set of adjustments determines if the ***adjusting*** creates a branch, sequel, or abandonment of earlier planning.

III. Second set of criteria

The planning parameters.

In addition to the five elements of the planning function, the historical analysis will evaluate the planning parameters of **mode** and **detail**. Besides their utility as criteria for analyzing planning in the past, these doctrinal parameters are useful in describing the distribution of the planning function in future force designs.

Emerging Army doctrine, in the initial draft of *FM 5-0: Army Planning and Orders Production*, bounds the level of detail appropriate in plan development by identifying three

[13] Ibid., par. 1-4, 1-2.

modes: ***commitment***, ***contingency***, and ***orientation-planning horizon***s.[14] The distance into the future and the level of uncertainty in the situation are the related variables determining the planning horizons. The **commitment-planning horizon** involves planning with a forecast having certainty about the course of future. The **contingency-planning horizon** involves planning with a forecast having several plausible courses for the future. The **orientation-planning horizon** involves planning where forecasts about the course of the future are practically meaningless.

The Marine Corps uses an additional parameter in its planning doctrine. This second parameter is **detail** and it includes three levels: ***conceptual***, ***functional***, and ***detailed*** planning.[15] The highest level is **conceptual planning**, which "establishes aims, objectives, and intentions and involves developing broad concepts for action." The **functional planning** level combines elements of conceptual and detailed planning and "is concerned with designing supporting plans for discrete functional activities like maneuver, fires, logistics, intelligence, and force protection." The **detailed planning** level involves the specifics of implementing concepts and "works out the scheduling, coordination, or technical issues involved with moving, sustaining, administering, and directing military forces."

IV. Third set of criteria

The relationships between the theoretical levels of military operations.

Categorizing military activity as happening at the *strategic*, *operational*, or *tactical* level of war remains a useful theoretical construct for analysis and study. Two relationships connect strategy to tactics through a C2 echelon functioning at the operational level of war. Planning transforms a concept that supports a strategic **aim** through that C2 echelon into clear directives for tactical **action**. This makes the relationships between the levels—**strategic-operational** and **operational-tactical**—significant when considering the distribution of the planning function.

[14] FM 5-0, par. 1-25, 1-6; US Marine Corps, *MCDP 5 Planning*, 35-42.
[15] MCDP 5, 35-37.

The Units of Purpose categories introduced with the Objective Force Concept help the historical analysis determine the planning relationship between echelons. The differences in size and designation of formations can be set aside. The echelons of command are appropriate to both effects and to the formations producing them. A set of control and control-feedback dynamics functions in the **operational-tactical** relationship between Units of Action and Units of Employment. A separate set of control and control-feedback dynamics functions in the **strategic-operational** relationship between Units of Employment and higher headquarters.

V. Fourth set of criteria

The doctrinal concepts of operations and of logistical support.

The US Army directs operations through the doctrinal concepts of the **concept of operations** and the **concept of logistical support** (combat service support).[16] Distinguishing between the planning of operations and the planning of logistical support highlights two different kinds of activity present in military operations. The concept of operations involves activity directed outward from friendly military formations. The concept of logistical support involves activity directed toward friendly formations.

In the **operational-tactical** realm of military action, sustaining operations involve longer lead-times, greater levels of detail, and more certainty than decisive and shaping operations. In the **strategic-operational** realm, what is physically possible in logistical support conditions the operational design and affects the development of courses of action. As the historical analysis in the next chapter will show, increasing technological complexity demands more detail in the planning logistical support.

[16] US Department of the Army, *Field Manual 3-0: Operations* (Washington, D.C.: U.S. Government Printing Office, 2001), paragraph s 6-19 and 12-14.

CHAPTER THREE

PLANNING MILITARY OPERATIONS IN THE INDUSTRIAL-AGE

I. Technology and industrialization

Operational art made a team activity conducted by commanders and their staffs.

The wars of Napoleon gave birth to modern war at the start of the 19C. Conflict gained a scope and a scale—divisions, corps, and armies engaged within a battlespace encompassing a hundred square miles—that presented a challenge above Napoleon Bonaparte's genius and beyond the capacity of skilled generals. Napoleon could always effectively plan his campaigns and operations to move his armies through a theater of operations and control the concentrating forces for battle. However, after 1807 the scope and scale of battles slipped beyond his method of command.[17]

Technological advance and Industrialization, within a generation of Napoleon, slipped not only battles, but operations and campaigns beyond the capacity of an individual, no matter how skilled, and gave rise to the commander's headquarters with its General Staff of technocrats.[18] In the 19C, industrialization added to the means of war first railroads and telegraph and telephone, and then automotive vehicles and radio. The 20C's technological advances contributed aircraft and computerization. Each technological pair required a generation's worth of use in war before militaries successfully made them part of their doctrine of war.

The Objective Force Concept anticipates and seeks to affect rapid technological advances in the coming decades. By studying how planning occurred after militaries had made each technological pair part of war fighting, this monograph validates its proposed design parameters for distributing the planning function in the Objective Force. The military operations analyzed involved Objective Force operational concepts.

[17] True, Napoleon had a General staff led by Berthier, but the conception of the shaping, decisive, and sustaining operations always lay with Napoleon and not his subordinates or staff.

The Great Sioux War of 1876-77 involved **operational maneuver from strategic distances**; **simultaneous**, **non-contiguous**, **distributed operations**; and **multi-modal strategic and operational resupply** means. OPERATION WESERUEBUNG—the combined air, sea, and land German invasion of Norway in 1940—involved **operational maneuver from strategic distances**; and **simultaneous**, **non-contiguous**, **distributed operations**. It also demonstrated **adaptive force dominance**. During 1967 US military operations in Vietnam, OPERATION JUNCTION CITY involved **simultaneous**, **non-contiguous**, **distributed operations**; **ground and air mobility**; **close synchronization of maneuver and fires**; and **multi-modal strategic and operational resupply** means.

Normalizing terms adds analytical clarity when different-sized formations create similar strategic-operational effects. The historical study refers to formations in Objective Force terms, based upon their function within the framework of each campaign. The table below fits actors and echelons within the Objective Force categories.

Table 1. Cross-index of terms for military echelons

Campaign	CINC	HHQ	Unit of Employment	Unit of Action
Great Sioux War	Sheridan	Division of the Missouri	brigade column	regiments battalions
WESERUEBUNG N.	Adolf Hitler	OKW	Group XXI	Divisions
JUNCTION CITY	Westmoreland	USMACV	II Field Force	divisions brigades

[18] Arden Bucholz, *Moltke, Schlieffen and Prussian War Planning* (Oxford: Berg Publishers, 1991), 18-20.

Planning the Great Sioux War 1876-77

II. The Origins of the Great Sioux War, 1876-77.

In 1876, Lieutenant General Phil Sheridan commanded the Division of the Missouri, which encompassed over a million square miles.[19] Among its four departments were those of Dakota and of the Platte (see figure 1). These departments were the theater of operations where Sheridan carried out the destruction of the century-old Plains Indian culture in the two decades after the US Civil War.

The US Civil War was catalyst and impetus to the great westward expansion. The rebellion of the slave states mooted thirty years of dispute over the route of the first transcontinental railroad. Settlers spread north and south from the transcontinental rail road lines, cultivating and economically developing the territories west of the Mississippi that earlier US policy had ceded to the American Indians in perpetuity.[20]

The warrior culture of the Plains Indian—built upon free roaming, raiding, and personal honors won in territorial battles—could not be reconciled with the way of life demanded by the encroaching civilization.[21] The Plains Indians opposed through guerrilla warfare and terrorism the effort to take their ponies, push them onto reservations, and make them into farmers and ranchers. They pushed back against the invading flood of settlers by raiding and plundering to assert the boundaries of their territory.

Non-agency Indians operated from the mobile bases of friendly villages, which moved with the buffalo herds during the warm weather months. Though mobile, the villages were slow and the need to protect the families within them restricted tactical freedom of action. The agency

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[19] Paul Andrew Hutton,. *Phil Sheridan and His Army (*Lincoln, Nebraska: University of Nebraska Press, 1985), 117.

[20] Stephen E. Ambrose, *Nothing Like It in the World: The Men Who Built the Transcontinental Railroad 1863-1869* (New York: Simon & Schuster, 2000), 18, 24, 27; S.L.A. Marshall, *Crimsoned Prarie: The Wars Between the United States and the Plains Indians During the Winning of the West (*New York: Charles Scribner's Sons, 1972), 11-12.

Indians, led by chiefs who had moved their tribes onto reservations, approved of and often supported carrying out violence against encroaching settlers. The result was a sanctuary and forward base system that provided Indian war parties with food, ammunition, and extra horses and allowed them to operate in the field without encumbering supply trains.[22]

By 1875, fomenting a decisive war with the Sioux had become a national policy objective.[23] The US economy was still recovering from a financial panic in 1873. National interest lie in vacating treaty agreements regarding the Indian lands, which would facilitate development of the Northern Pacific Railroad line and exploitation of the Black Hills—object of a gold rush touched off in 1874.

In June 1874, Sheridan and General of the Army William T. Sherman had briefed President Grant on a design for advancing the aim of a domesticated American West.[24] The Secretary of the Interior would cede control of the Indian Agencies back to the Army. Using winter as an ally, the Army would search and attack—pursuing roving Sioux bands until they were exhausted and forced to surrender at the agencies. There, the Army would disarm them, dismount them, and imprison their war leaders. Military action against the northern Sioux would be feasible in 1876.[25]

On November 2, 1875, President Ulysses S. Grant held a White House war conference with Lieutenant General Sheridan and Brigadier General Crook, commander of the Department of the Platte. The Secretaries of the Interior and of War also attended.[26] The result of the conference was the pretext for a decisive war.

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[21] Marshall, 6-7, 14-15.

[22] Oliver Knight, Following the Indian Wars: the Story of the Newspaper Correspondents Among the Indian Campaigns (Norman, Oklahoma: University of Oklahoma Press, 1960), 17; Wilbur S. Nye, Plains Indians Raiders: the Final Phases of Warfare from the Arkansas to the Red River (Norman, Oklahoma: University of Oklahoma Press, 1968), 119, 127.

[23] *Phil Sheridan and His Army*, 291-92.

[24] Nye, 168.

[25] Nye, 168; John S. Gray, *Centennial Campaign: The Sioux War of 186* (Norman, Oklahoma: University of Oklahoma Press, 1988), 24.

[26] Ibid., 25-26.

The Department of the Interior accomplished this by issuing an agency registration ultimatum on an unrealistic timetable. On December 3, 1875, the department directed Indians to either enter agencies by January 31, 1876, or be designated *hostile*.[27]

III. The Course of campaign in the Great Sioux War, 1876-77.

The Great Sioux War consisted of fifteen engagements fought from March 1876 to May 1877. The theater of operations encompassed 120,000 square miles. The US Army eventually defeated the Sioux by using the harsh winter of the Great Plains. Winter campaigns had already succeeded twice: in 1868 and in 1874-75. [28]

The Division of the Missouri conducted the war in a three-phase offensive campaign. The first phase was an abortive winter operation launched in March 1876. The second phase was a disastrous summer operation, remembered now for the annihilation of Custer's command. The third phase, a set of fall and winter operations, brought the campaign to endstate. The campaign used three Units of Employment: two from the Department of the Dakota, and one from the Department of the Platte.

The Units of Employment did not carry out Sheridan's concept during the winter of 1875-76. In the Department of the Dakota, Major General Terry's willful ignorance of the coming war retarded both his planning and preparations. He lacked the supplies to sustain offensive operations, and the winter closed rail and river lines of communication lacked the supplies to sustain offensive operations.[29] Terry's subordinate, Colonel Gibbon, did however launch his Unit of Employment on March 17, 1876, scouting eastward along the Yellowstone River all during the spring.

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[27] Ibid., 31.

[28] Jerome A. Greene, "The Great Sioux War: A Military Perspective," in *Battles and Skirmishes of the Great Sioux War, 1876-1877: the Military View*, ed. Jerome A. Greene (Norman, Oklahoma: University of Oklahoma Press, 1993), *vx*; Nye, 129; Knight, 20.

[29] Gray, 31-32.

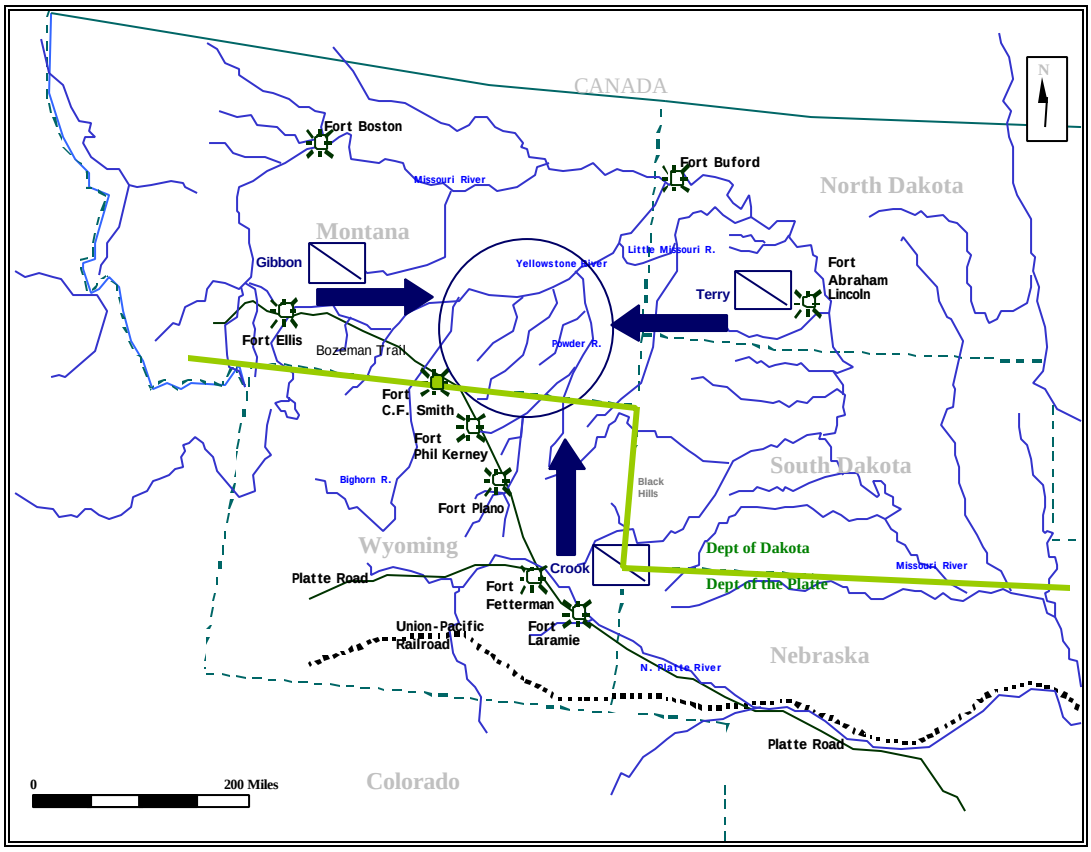

Figure 1. Sheridan's 1876 Campaign Plan[30]

In the Department of the Platte, Major General Crook aborted his winter operations just as Gibbon was deploying.[31] He had launched his Unit of Employment from Fort Fetterman on March 1, 1876, and made contact with a Sioux band on the Powder River two weeks later. However, the lead Unit of Action failed to defeat the warriors of this Indian village, despite overwhelming combat power and tactical surprise.

Terry finally deployed his second Unit of Employment May 17, 1876. A congressional investigation delayed his start. Lieutenant Colonel George A. Custer incurred President Grant's wrath by his subpoenaed testimony against the Secretary of War and the President's brother.

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[30] Adapted from *map 8:* William Glenn Robertson, Jerold E. Brown, William M. Campsey, and Scott R. McMeen, *Atlas of the Sioux War* (Fort Leavenworth, Kansas: Combat Studies Institute, US Army Command and General Staff College), 24.

[31] *Phil Sheridan and His Army* 302.

After a temporary relief, Sheridan partially restored Custer to command of the 7th Cavalry, which was the core of Terry's second Unit of Employment.[32] General Terry accompanied it, with orders to supervise Custer.

Crook launched northward from Fort Fetterman two weeks later, on May 29, 1876, and made contact with a hostile Indian band on June 9 while moving west along the Tongue River. During this time, the 5th Cavalry Unit of Action completed staging at Fort Laramie, having deployed into the theater of operations by both rail and steamboat. It was to guard the White River agencies from Forts Robinson and Sheridan.[33]

The Army encountered something new during 1876. On June 17, Crook fought an indecisive engagement at the Battle of the Rosebud. Confounding him, the Sioux stood their ground though they were not covering the withdrawal of their village. Crook withdrew to his forward supply base on the Goose Creek, reported the engagement to Sheridan, and halted his advance. In response, Sheridan apportioned five additional companies to Crook's Unit of Employment and forwarded the report to Terry.[34]

The telegraph link between Sheridan and Terry had broken on May 16, and Crook's report did not reach Terry for weeks. Terry believed that Crook was coming within supporting distance from the south and that the Indians were concentrated in the Little Big Horn Valley. Having combined Gibbon's Unit of Employment with his, Terry divided his force into three Units of Action, to move to contact. Custer commanded the one that moved up the Rosebud Creek. On June 25, he launched an afternoon assault.

Custer attacked with the other Units of Action beyond supporting distance. Between 7,000 to 9,000, Sioux and Cheyenne annihilated his Unit of Action (five companies of the 7th Cavalry Regiment). Terry withdrew to his Forward Support Base.

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[32] Ibid., 306-11.
[33] *Phil Sheridan and His Army*, 312.
[34] Ibid., 314-15.

Terry's report reached Sheridan on July 5, the received since May 16. Sheridan was in Philadelphia and the report confirmed news he had learned the day before from an Associated Press story. Throughout the month of July, Sheridan reinforced the Units of Employment and sealed agency borders, having finally gained administrative control. By August, Crook and Terry were prepared to resume the offensive.

Though only seventy miles separated Terry and Crook throughout July, they lacked direct communication and the hostile bands successfully screened the escape of the tribes' main bodies.[35] The summer operations ended without much further result. Terry and Gibbon began withdrawing their Units of Employment from the field on August 25 to prepare for winter operations.

With control over the Indian agencies, Sheridan was able to deny sanctuary, sustainment, and armament to the hostile bands. After refitting for the winter, the Units of Employment pursued now separate Indian bands, driving them to exhaustion from November 1876 to May 1877. During the campaign's winter phase, the Units of Employment continued employing distributed maneuver in non-contiguous operations.

IV. The Planning Function in the Great Sioux War

A. Analysis of the Elements of the Planning Function: visualizing, anticipating, forecasting, sequencing and adjusting.

With the experience of two campaigns against Plains Indians during ten years of high command in the American West, Sheridan knew what the Army could accomplish under the mobility and communications constraints of the 1870s. His operational design and command directives reflected his visualization of the battlespace. This visualization began forming when he first contemplated a decisive war against the Sioux in 1870.[36]

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[35] Charles King, *Campaigning with Crook*, With an introduction by Don Russell (Norman, Oklahoma: University of Oklahoma Press, 1967), 71-73.

[36] *Phil Sheridan and His Army*, 282-283.

Sheridan's directives throughout the winter of 1875-76 indicated no intent to converge the three Units of Employment near the Little BigHorn, nor anticipation that the Army would bring the Sioux to a decisive battle.[37] Rather, he anticipated that a Unit of Employment might encounter between 500 and 900 Indian warriors at any one time. He estimated that a band of Sioux confronting a Unit of Employment column of 1,000 soldiers would judge itself overmatched and that it would make a hasty withdrawal.[38]

Sheridan intended that the independent operations of the columns would have a simultaneous effect upon the hostile Indian bands. The ramifications of their success in affecting the behavior of the bands surprised his subordinates. The Units of Employment had maneuvered into contact with the Sioux during the two-week window in which they could concentrate in sufficient strength to oppose one of the Units of Employment.[39] After Crook's repulse at Rosebud Creek and Custer's destruction at the Little BigHorn, the Unit of Employment commanders had to adjust the concept of operations.

B. Analysis of the planning parameters: mode and level of detail.

Sheridan had limited preparatory planning to conceptual-level detail with an orientation-planning horizon. He believed that circumstances encountered during operations would dictate the sequence of events and tactical level activities. Events confirmed Sheridan in his belief. When surprised by the hostile bands during June, the Army commanders took July to adjust their concept of operation.

C. Analysis of the relationships between the theoretical levels of military operations in the campaign.

The campaign plan for the Great Sioux War and the concepts of operations and logistical support resulted from collaborative planning between the Units of Employment and the Division of the Missouri headquarters in Chicago. Sheridan, Crook, Terry, and Custer were the principal

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[37] Don Russell, in King, *xix.*
[38] *Phil Sheridan and His Army*, 301.
[39] *Phil Sheridan and His Army*, 305.

planners. Sheridan and Crook designed the strategic-operational concept of operations. He tasked his Unit of Employment commanders to design operational-tactical concepts of operations.

Terry began his planning only after Sheridan notified his department commanders that "[t]he War Department has ordered operations against hostile Indians."[40] Custer probably led the planning effort at Terry's St. Paul, Minnesota, headquarters from February 15 to 28, 1876. Heavy telegraph traffic between Terry and Sheridan's headquarters began on February 15, indicating the start of planning.[41]

The Unit of Employment commanders did their operational-tactical planning to a functional-level of detail with a contingency-planning horizon. Crook and Terry also did operational-tactical adjustment planning from August 1876 to the end of the campaign. The strategic-operational design set by Sheridan at its start still guided their planning.

D. Analysis of the concepts of operations and of logistical support.

The reliance upon horse couriers and steamboats traveling the waterways meant that coordination between the Units of Employment and with the Division of the Missouri took weeks. Recognizing that coordinated, simultaneous action between the non-contiguous Units of Employment was not feasible in this campaign, operational-tactical autonomy was part of Sheridan's operational design.

He did not adjust the campaign design when the Army lost winter as an ally. Sheridan revealed this in a May 29, 1876, letter to Sherman:

> The organization of the commands and what they expect to accomplish has been as yet left for the Department Commanders. I presume the following will occur: General Terry will drive the Indians toward the Big Horn valley, and General Crook will drive them back toward Terry, Colonel Gibbon moving down on the north side of the Yellowstone to intercept, if possible, such as may want to go north of the Missouri to the Milk River.[42]

[40] Ibid., 37. Gray citing official Army communications.
[41] Gray, 37-38.
[42] Gray, 95.

While leaving development and adjustment of the operational-tactical concept of operations to his subordinates, Sheridan and his headquarters did do the detailed planning that adjusted the operational-tactical concept of logistical support and sustained the deployed forces.[43] Crook and Terry's Units of Employment received the resupply, remounts, replacements, and reinforcements Sheridan's staff forecast from Chicago, based upon reports received from the field and their own knowledge of operational requirements in the American West. The Division of the Missouri headquarters also adjusted the combat power requirements and conducted the operational-tactical detailed planning that reinforced the guarding forces around the Indian agencies.

Planning WESERUEBUNG: 1940 German Invasion of Norway

Sheridan waged a successful strategic-operational campaign, though the Units of Employment had many operational-tactical setbacks and significant defeats while conducting its major operations. Sixty-four years later, in the military succeeding the one Sheridan had watched defeat France in 1870, Units of Employment gained operational-tactical successes in a strategic-operational campaign that came near failure. The decisive operation that it supported eventually underwrote the success of WESERUEBUNG.

V. The Origin of Operation WESERUEBUNG.

Hitler accepted the necessity of invading Norway only with regret. His aim was to the west and not to the north. During the fall and winter of 1939, a pact with Stalin secured the German eastern frontier, already strengthened and deepened against a Soviet threat by Nazi subjugation of east European states. The April 1940 German invasion of Norway, Operation WESERUEBUNG, was a shaping operation for PLAN GELB: the conquest of France, Belgium,

[43] Greene, *xix*.

and the Low Countries of Europe.[44] Three strategic factors pushed control of Norway into Hitler's war planning.

The first strategic factor was the critical requirement for iron. Originating from Sweden's ore fields, 11 million of the 15 million tons annually consumed by Germany during the immediate pre-war years passed through the ports of Norway.[45] The port of Narvik by itself each year loaded 4.5 million tons of iron onto German ships for transit across the North and Baltic Seas. Norway's neutrality protected German shipping until it passed into the Baltic Sea and came under the protection of the German Navy. By the fall of 1939, the possibility of Britain gaining control of Norway's waters was a threat.

The second strategic factor was Narvik's location on the Norwegian Sea. The navy controlling this port would command access to the North Atlantic, the North Sea, and the Baltic Sea. Aircraft originating from Narvik could range Britain. Thus, an invasion of England would gain a strategic-operational advantage by controlling Norway.

The third strategic factor pushing Hitler toward seizing control of Norway was the Soviet invasion of Finland, which began on November 30, 1939.[46] The Allies tried to aid Finland by using Norway's ports. Hitler foresaw that Norway might end its neutrality by diplomatically ceding effective control of its ports and waters to the British Navy and that placed PLAN GELB in jeopardy.

Geography dictated that an invasion would have a strong naval character, and that meant Germany must overcome the more powerful British Navy by orchestrating service capabilities. The operational concept developed by the OKW planning cell called for simultaneous occupation of Norway's five major population centers: Olso, Stavenger, Berjen, Trondheim, and Narvik.[47]

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[44] Stephen P. Taylor, "Synchronization in Joint Operational Warfare," Monograph (Newport, Rhode Island: Naval War College, 1996), 2.

[45] Lem Jasczak, "Operation Weseruebung: Operational Art in Joint Warfare," Monograph (Newport, Rhode Island: Naval War College), 2.

[46] Jasczak, 3.

[47] Taylor, 3.

The desired endstate was neutralization of Norway's armed forces; control of its airfields and seaports; and control over the population, which was concentrated in the five coastal cities. The Germans would accomplish this through a combination of airborne and sea-borne assaults.

VI. The Course of Operation WESERUEBUNG.

Operation WESERUEBUNG began on April 9, 1940. It lasted eight weeks, from the initial deployment of German assault forces on April 7 to Norway's signing of an armistice on June 9, 1940. The major engagements were the landings at Kristiansand and Olso, along with the German Air Force's neutralization of the British Navy. Later major engagements included the repulse of the Allied landing at Trondheim on May 3 and the month-long defense of Narvik against the Allied counter-offensive during May 1940.[48]

The invasion of Norway exacted a further shaping operation: the military occupation of Denmark, which was necessary for German Air Force forward basing. Thus, the theater of operations encompassed 540,000 square miles comprising Denmark, portions of the Baltic, North, and Norwegian Seas, and the 1,000 plus miles of coastal waters bounding the fjords of Norway.

Originally, Army General Nikolaus von Falkenhorst, Commanding General XXI Corps (Unit of Employment), was to plan and execute WESERUEBUNG—with command of all the German Air Force, Navy, and Army forces involved—as Hitler's direct subordinate.[49] In response to German Air Force protests, the air forces came under the control of X Air Corps. Similar protests resulted in the German Navy's control over the operation's four naval task forces—the WARSHIP, TRANSPORT, TANKER, and EXPORT ECHELONs. In planning and execution, Falkenhorst commanded only the ground forces and was a first among equals within the joint sphere of the operation.

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[48] Taylor 6; Jasczek, 14-16.
[49] Taylor, 3.

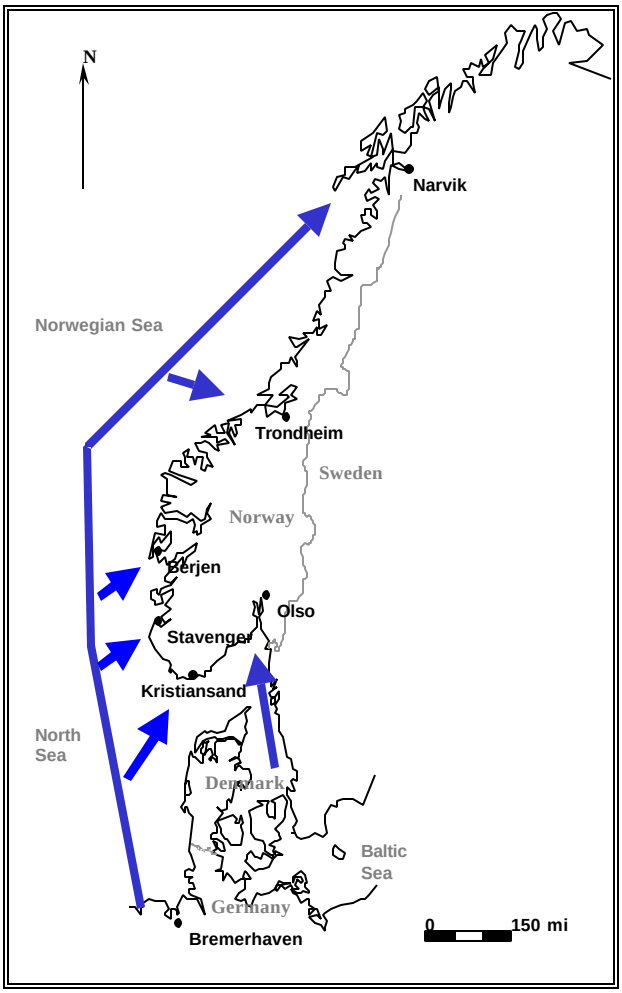

Figure 2. OPERATION WESERUEBUNG, APRIL 1940[50]

In execution, the German Navy diverted the British Navy by sending the battleships *Gneisenau* and *Scharnhorst* into the North Sea and then relying on a fleet of twenty-eight submarines to guard the surface echelons. The German Air Force also denied the British access to the German sea-line of communications. The successful strategic-operational deployment of sea-borne forces into their assault array resulted from fog and foul weather screening the bulk of the naval movements, which preserved all but two ships of the WARSHIP ECHELON.

Germany concentrated sufficient forces to carry its W-Day objectives within twelve hours. By the evening of W-Day, the five ports and two airfields the Germans sought to seize in

Norway were under their control. Within two days, Norway's military collapsed and its King was escaping the country.[51] Germany delivered an operational shock that collapsed Norway's military and stunned the Allies to inaction for two weeks.

At 0530 on April 9, 1940, the initial German assaults against Narvik, Trondheim, Berjen, Kristiansand, and Olso began. 8,850 troops distributed among five Units of Action debarked from the WARSHIP ECHELON. Troops aboard 500 transport planes conducted air-landing and airborne assaults against the airfields at Olso, Stavenger, and Berjen. The German Air Force committed 500 fighter and bomber aircraft to close air support operations on W-Day. Two dive-bomber squadrons provided close air support for the seizure of Aalborg, Denmark, and another squadron supported the seizure of Stavenger. Bombers successfully attacked and forced the withdrawal of the British Navy from the narrow waters separating Denmark from Norway. One squadron began operating from Stavenger on April 9. Basing at Aalborg, Denmark, fighters flew escort guarding the German Navy's TRANSPORT ECHELON.[52]

Ahead of the WARSHIP ECHELON carrying the assaulting Units of Action, the Navy pre-positioned the elements of the sustaining operations. By exploiting the neutrality of Norway's waters, the German Navy arrayed the TANKER and EXPORT ECHELON on April 3, 1940. Behind the WARSHIP ECHELON came three serials of the TRANSPORT ECHELON. It put ashore 16,500 troops at Olso from W+1 to W+7. During the same period, the German Air Force air-landed 8,000 additional troops.[53]

The successful occupation of Denmark by W+2 insured the sustaining operations. The TRANSPORT ECHELON ferried 40,000 troops and the German Air Force projected 29,000

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[50] Adapted from Timothy Lindemann Monograph, "Joint Operations Case Study WESERUEBUNG NORD: Germany's Invasion of Norway, 1940," (Maxwell AFB, Alabama: Air Command and Staff College, 1997), 21.

[51] Jasczak, 14.

[52] Taylor, 4-6; Jasczak, 13.

[53] Jasczak, 13; Taylor, 5.

troops and 2,376 metric tons of logistics by air into Norway. The occupation also enabled German Air Force air superiority over the operational area.[54]

The Germans quickly turned to consolidating their hold. With GELB still a month away, the Germans had to withstand an Allied counter-stroke. Narvik was beyond the operational reach of the German Air Force, and only the determination of mid-level staff officers at OKW had kept Hitler from abandoning this decisive point and its 5,000 defenders as early as mid-April. The rapid collapse of the Belgian and French armies and the looming disaster in west Europe forced the Allies to abandon Norway on June 8, 1940. GELB decided the final success of WESERUEBUNG, the operation for which it had set conditions. Admiral Raeder had anticipated the need for the shaping operation and the German military successfully integrated the effects of the two operations.[55]

VII. The Planning Function in OPERATION WESERUEBUNG

A. Analysis of the Elements of the Planning Function: visualizing, anticipating, forecasting, sequencing and adjusting.

The general staff system worked in the development of WESERUEBUNG: it was the product of many minds. Admiral Raeder, head of OKM (German Navy High Command), advised that the German Navy could best support the invasion of France and the Netherlands from Norway. Raeder's estimate prompted OKW (the German Armed Forces High Command) preparation of *Studie Nord*.[56]

Hitler approved secret release of *Studie Nord* to the service headquarters on January 10, 1940. The German Air Force High Command (OKL) and Navy High Command (OKM) assumed Norway's continued neutrality and concentrated on PLAN GELB. At the insistence of Admiral Raeder, the OKM staff expanded *Studie Nord* during January 14-19, 1940.[57] This effort produced

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[54] Taylor, 5-6.
[55] Jasczak, 16-17.
[56] Taylor, 2; Mark A. Bellini, "Is Getting There Half the Battle?: Considerations for Deployment of Forces," Monograph (Ft. Leavenworth, Kansas: School of Advanced Military Studies, 1992), 4-5.
[57] Hill, 8.

the concept for using warships to transport the assault forces for six non-contiguous landings along the length of Norway's coast.

Poor weather during January 1940 forced Hitler to postpone GELB until March; just days after OKM completed its planning effort. OKW planners built upon the OKM staff's planning and determined that the invasion would require close air support projected from Denmark. Britain spurred final maturation of WESERUEBUNG when, in neutral Norwegian waters, it sailors boarded the *Altmark* on February 14, 1940.

In response, Hitler directed that an operational headquarters turn WESERUEBUNG into a detailed operational plan. With only a commercial travel map and the expanded *Studie Nord*, General Falkenhorst applied the allocated forces and created his revised conceptual plan in about five hours.[58]

B. Analysis of the planning parameters.

With the Soviet invasion of Finland, Admiral Raeder's estimate of the necessity of controlling Norway militarily had gained support. General Jodl, OKW chief of staff, took charge of the initial analysis for an invasion of Norway. A restricted cell within OKW did conceptual-level work on an orientation-planning horizon, producing *Studie Nord* at the end of December 1939.[59] In January 1940, the OKM staff used *Studie Nord* to develop a functional plan with an orientation-planning horizon.

GELB's postponement gave the Allies an opportunity to move on Norway. This risk had pushed Hitler to advance German functional planning. It fell to an OKW special staff, in effect a joint planning group, on February 5, 1940. The events of February and March drove coordination of a joint planning effort to produce a detailed-level plan within a four-week commitment-planning horizon.

[58] Jasczak, 10; Bellini, 7.
[59] Ibid., 4-5.

Falkenhorst integrated the OKW special staff into his own Unit of Employment (XXI Corps) staff on February 21, 1940.[60] Hitler put WESERUEBUNG on a commitment-planning horizon on March 1, 1940. Falkenhorst chaired the first inter-service meeting to coordinate detailed planning on March 5, 1940. To meet the timeline, training and logistical preparations took place in parallel with the detailed planning effort.

C. Analysis of the relationships between the theoretical levels of military operations in the campaign.

The plan for Operation WESERUEBUNG and its decisive, shaping, and supporting operations resulted from extensive collaborative planning among the forces of the German armed services allocated to the operation. This collaboration also took place between staff officers in the services' high commands. There was also a combination of parallel and collaborative planning within each service.

General Falkenhorst was Hitler's chosen operational expert and advisor, a position from which he leveraged the cooperation and support of the service General Staffs. The OKW-Group XXI-OKH nexus also allowed Falkenhorst, in his role as Unit of Employment commander, to simultaneously direct both the strategic-operational planning cooperation among the services and operational-tactical planning collaboration down the service lines.

Strategic-operational considerations had first brought Admiral Raeder to the conclusion that the Navy needed the ports of Norway for the coming invasion of France and the projected later invasion of Britain. WESERUEBUNG, conceived as an operation supporting GELB, gained its own supporting operation during operational-tactical planning. The occupation of Denmark supported the invasion of Norway.

D. Analysis of the concepts of operations and of logistical support.

Operational planning was beyond the functional design of the OKW. It gained the absent planning capacity by an ad hoc networking of the capabilities distributed among the service High

[60] Geoffrey P. Megargee, *Inside Hitler's High Command* (Lawrence, Kansas: University Press of

Commands and the forces allocated to the operation. The Group XXI Unit of Employment staff completed the detailed planning in coordination with the Navy and German Air Force forces, and with XXXI Corps.

The XXI Corps staff supported the core team of OKW joint planners in operational and logistics support planning.[61] The novelty of a joint operation and the constraints on the forces available had made the OKW planning group start from the capabilities required, rather than parceling out missions according to accepted service roles.[62]

The OKH (German Army High Command) provided its logistics and intelligence expertise in anticipating, forecasting, and sequencing planning functions. In effect, the OKH Supply, Transportation, and Foreign Armies West branches were planning modules networked into the OKW through Falkenhorst's corps staff.

The constrained size of the force packages facilitated close coordination between services, as did the lack of a formal joint structure. The success of this unprecedented operation and the planning effort that conceived it owed something both to German military traditions and to the relationship between Hitler and his generals. Thrust into the unknown, the staffs and commanders with responsibility for carrying out the operation pulled together because no service arm had strength enough to imagine that it might succeed on its own.[63]

Planning Air Mobile OPERATION JUNCTION CITY: Vietnam 1967

A generation later, the US Army was equipped with doctrine, training, and materiel developed largely from studying its fight against the German military that planned and executed WESERUEBUNG. The tactical use of helicopters grew to maturity in Vietnam. One of the largest US ground operations of that conflict happened in the spring of 1967.

Kansas, 2000), 77-78.

[61] Megargee, 78; Taylor, 4.

[62] Jasczak, 8-10.

[63] Jasczak, 12.

VIII. The Origin of OPERATION JUNCTION CITY.

By the end of 1966, the US military commitment to the security of the Republic of South Vietnam included 385,000 troops. The Commanding General, US Military Assistance Command Vietnam (USMACV), General William C. Westmoreland was requesting a 1967 increase to 500,000 troops. USMACV was the strategic-operational echelon that converted President Lyndon B. Johnson's US policy aims into action. [64]

In 1965, General Westmoreland had faced mounting South Vietnamese military losses to Viet Cong guerrillas, which threatened the legitimacy and viability of the government of South Vietnam. His June 1965 theater strategic concept added two aims to USMACV's ongoing foreign internal defense operations to train, advise, and prepare South Vietnamese security forces. The first was to employ U.S. forces in securing South Vietnam "from large well organized and equipped forces including those which may come from outside the country." The second was to employ U.S. forces in securing South Vietnam from guerrilla and terrorist internal threats. This was the strategic design that, eighteen months later had him requesting half a million troops.

To meet his strategic objectives, Westmoreland's USMACV developed a three phase strategic-operational theater campaign. Phase One would halt the losing trend in South Vietnam by the end of 1965. Phase Two would involve shaping operations in the first half of 1966, destroying Viet Cong and North Vietnamese Army forces, and stabilizing high priority areas. Phase Three would be a decisive campaign.[65]

Though USMACV had accomplished its Phase One objective and halted the disintegration of South Vietnam's military and government, North Vietnam built up its combat power to match the US commitment. President Johnson did not provide the forces Westmoreland

[64] William C. Westmoreland, *A Soldier Reports* (New York: De Capo Press, 1980. Reprint, New York: Doubleday, 1976), 74, 193-194.

[65] Westmoreland, 142; Miller, 22.

believed he needed then or later because of political constraints. Nonetheless, USMACV continued with the "big unit strategy" through 1968.[66]

The dual nature of the threat—the communists simultaneously conducting conventional military operations and insurgent warfare against South Vietnam—required that South Vietnam and USMACV keep large enemy formations out of contested areas and eliminate the insurgent threat. The US Ambassador, Henry Cabot Lodge, and General Westmoreland disagreed over control of stability operations and its priority relative to defeating large field formations. Constrained by US policy decisions that precluded a ground invasion of North Vietnam or the commitment of greater forces, Westmoreland struggled to fight both the large formations and the insurgents.[67]

He sought to take advantage of US forces' mobility and firepower while legitimizing and strengthening the South Vietnamese. He tasked the US combat formations to fight the large enemy formations and coordinated for the South Vietnamese forces to focus on pacification.[68] Air interdiction focused on blocking North Vietnam's support to forces in South Vietnam, while close air support focused on air-ground combat operations aimed at defeating deployed North Vietnamese forces.

Westmoreland established a corps-level US headquarters within each South Vietnamese Army Corps area of operations. These "Field Force" headquarters advised and supported South Vietnam's army corps, coordinated combat and sustainment operations, executed territorial responsibilities associated with pacification, and served as needed as field army headquarters for the control of subordinate tactical corps.[69]

USMACV designated as *war zones* the contested areas within each corps area of operations. Headquarters, II Field Force was established at Bien Hoa, under the command of

[66] Miller, 24; Westmoreland, 160.
[67] Miller, 28-29; Westmoreland, 145, 153.
[68] Westmoreland, 146.
[69] Westmoreland, 155.

Lieutenant General Jonathan Seaman, who relinquished command of the 1st Infantry Division to Major General William Depuy. II Field Force worked with South Vietnam's III Corps in the provinces surrounding Saigon.[70]

This area of operations contained *War Zone C*, *War Zone D*, and the "Iron Triangle." Viet Cong had launched attacks against Saigon from these zones since 1959. Denying them to insurgent forces had highest priority for Phase Two operations in 1966.[71] USMACV forces had repeatedly engaged elements of the 5th and 9th Viet Cong Divisions in *War Zone C* during the spring and summer of 1966. The Viet Cong responded to USMACV offensive operations in the South Vietnamese III Corps area of operations by withdrawing across the Cambodian border.

The enemy had fully reversed its June 1966 withdrawal from *War Zone C* by August. The II Field Force responded with OPERATION ATTLEBORO, during October-November, 1966. During this time, II Field Force was already deep into the functional planning of JUNCTION CITY and CEDAR FALLS.[72]

By December 1966, a USMACV intelligence assessment that General Westmoreland brought to the II Field Force Headquarters prompted Lieutenant General Seaman to reverse the sequence of JUNCTION CITY and CEDAR FALLS.[73] CEDAR FALLS lasted seventeen days, and resulted in the discovery and destruction of a tunnel city in the "Iron Triangle" that was the Viet Cong Military Region 4 operations base and logistics complex. This operation delayed JUNCTION CITY by six weeks.

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[70] Westmoreland, 156.

[71] Samuel Zaffiri, *Westmoreland: A biography of General William C. Westmoreland* (New York: William Morrow and Company, 1994), 163.

[72] Westmoreland, 179-180.

[73] U.S. Department of the Army, "USMACV Command History '67," (San Fransico: Headquarters Department of the Army, Headquarters US Military Assistance Command, Vietnam), 386.

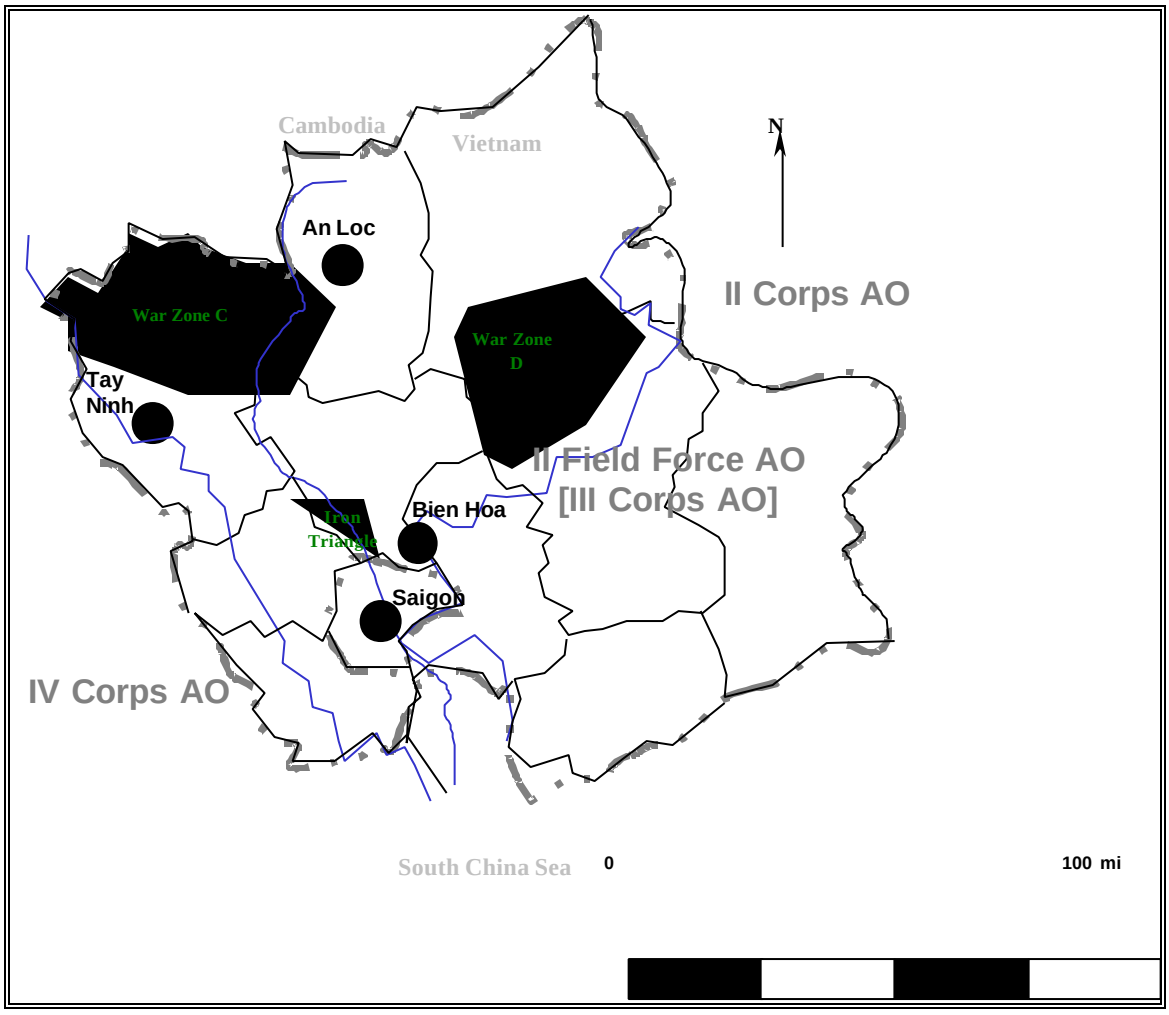

Figure 3. II Field Force Area of Operations[74]

IX. The Course of OPERATION JUNCTION CITY: February 22 to May 14, 1967.

Located seventy miles northwest of Saigon and encompassing 150 square miles of jungle plateau within its 1,000 square miles, *War Zone C* was an insurgent stronghold. JUNCTION CITY was a force-oriented search and attack operation. It was a multiple division air-ground offensive designed to "destroy the Central Office of South Vietnam, Viet Cong and North

[74] Adapted from *A Soldier Reports*, Map 7.

Vietnamese Army forces and installations in *War Zone C*, located in northern Tay Nihn Province."[75]

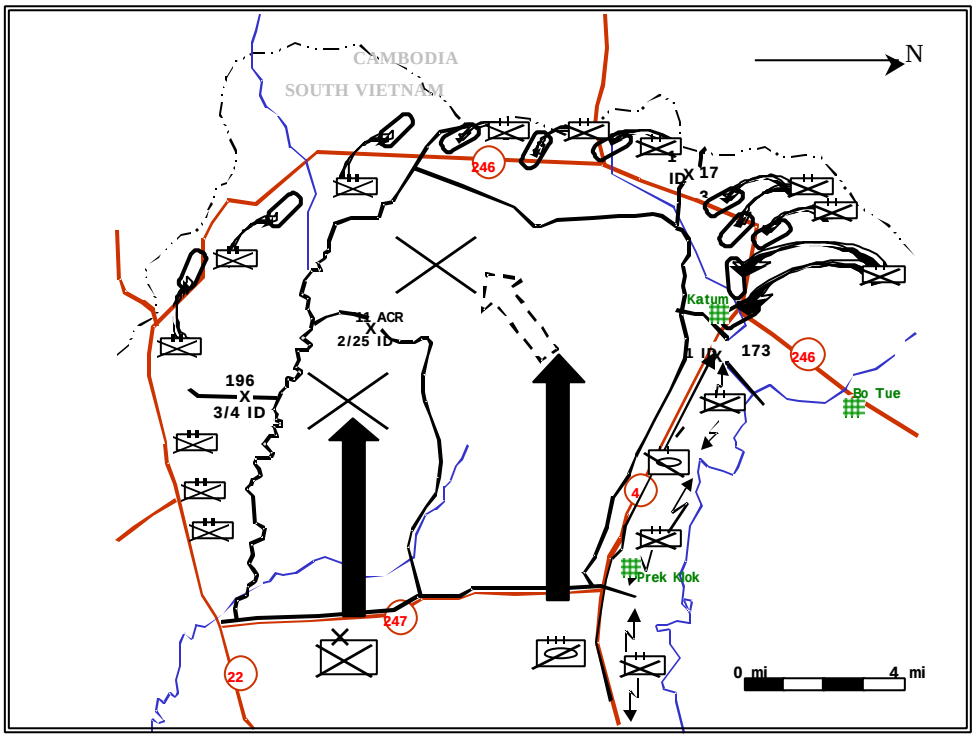

Figure 4 OPERATION JUNCTION CITY, February 22, 1967[76]

JUNCTION CITY incurred significant troop and material losses, but it did not destroy the communist Central Office of South Vietnam or eliminate the enemy headquarters and leadership. US formations fought five major engagements against rear-guard attacks during March 1967.[77] The brief effect JUNCTION CITY had on the enemy's combat power in *War Zone C* became apparent during the TET OFFENSIVE.

Two shaping operations supported Phase One of OPERATION JUNCTION CITY. II Field Force built-up logistics and troops adjacent to *War Zone C*. One Unit of Action, the 25th Infantry Division, conducted offensive operations in the extreme west. Another Unit of Action,

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[75] USMACV, 387-389; LTG Bernard William Rogers, "Cedar Falls-Junction City: A Turning Point," Monograph (Washington, D.C.: United States Army ,15 June 1973), 71; available from http://www.ehistory.com/vietnam/books/cedarfalls/0071.cfm; Internet; accessed 02/24/02.

[76] Adapted from Rogers, Map 11.

the 1st Infantry Division, conducted offensive operations eighty kilometers to the east. GASDEN was the western shaping operation that, along with TUSCON in the east, set conditions for JUNCTION CITY.

On February 22, 1967, Phase One of JUNCTION CITY began with a horseshoe-shaped cordon to contain enemy forces. Air Force B-52s and Close Air Support provided preparatory fires for "[c]oordinated air mobile, airborne, and ground assault to seal off escape routes into Cambodia and the eastern portion of War Zone C."[78] The decisive operation belonged to the 25th Infantry Division Unit of Action. Two 11th Armored Cavalry Regiment squadrons and a 25th Infantry Division mechanized infantry battalion attacked northwestward through *War Zone C* to find and destroy enemy forces. The containing units maneuvered by helicopter in local search and attack operation and secured the build up of two C-130 airfields and a CIDG camp.[79]

Phase One lasted twenty-one days. The Units of Action continued performing search and attack operations using battalions. The first phase ended at midnight March 17, 1967, once Commander, II Field Force assessed western War Zone C was cleared.[80]

The decisive operations then shifted to the eastern portion of the area of operations. In Phase Two of JUNCTION CITY, search and attack operations continued. The maneuver formations repositioned using coordinated air-ground assaults, and secured the lines of communication and to the construction of a third C-130 airfield.

Phase Two lasted twenty-nine days, ending on April 15, 1967. In addition to three major engagements initiated by the enemy, US forces received mortar attacks on their fixed positions and convoys on Routes 246 and 244 were constantly subject to mining and ambush. Maneuvering US forces made contact daily with enemy elements of platoon size or less, and sustained

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[77] USMACV, 387-388.

[78] II Field Force, *Operational Report for Quarterly Period Ending 31 July 1967*, 18 September 1967, 6; Rogers, 73; USMACV, 387.

[79] 1st Infantry Division Combat After Action Report—JUNCTION CITY, 8 May 1967, 3-9.

[80] Rogers, 89-19; II Field Force, 21.

engagements were infrequent.[81] On March 24, 1967, Lieutenant General Bruce Palmer, Jr. had succeeded Jonathan O. Seaman in command.[82]

Palmer extended JUNCTION CITY into a third phase. It was a new operation in all but name.[83] II Field Force dissolved the Unit of Employment and used a brigade task force—a "floating brigade"— throughout *War Zone C* to prevent enemy forces from reestablishing their bases. The brigade task force consisted of an infantry brigade, an armor company, and a South Vietnamese Ranger Battalion.

During the twenty-five days of Phase Three, the task force engaged only scattered elements of Viet Cong units. The Unit of Action found and destroyed bunkers and other military structures. Most friendly casualties came from mines and booby traps.[84]

General Westmoreland's intent had been to isolate, flush, fix, and then destroy enemy forces in zone in a combined arms air-ground offensive. Despite significant detailed planning and great effort, the operation failed to achieve its intended result. The enemy displaced its bases to Cambodia, and USMACV lacked sufficient forces to maintain control over the areas it cleared while still performing its stability operations.

X. The Planning Function in OPERATION JUNCTION CITY

USMACV had adapted US Army had a formal structure to the situation in Vietnam, attempting to address the requirements of fighting a war across the spectrum of conflict. The planning for OPERATION JUNCTION CITY and its decisive, shaping, and sustaining operations resulted from the normal staff procedures of the US Army during the mid-1960s. II Field Force planned and commanded JUNCTION CITY.[85]

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[81] Rogers, 110-111.
[82] II Field Force, 1.
[83] USMACV, 389.
[84] Rogers, 130.
[85] Miller, 27.

II Field Force commanded and controlled sixty-three battalion or larger operations and planned sixteen others while completing the functional planning for JUNCTION CITY in November 1966.[86] These operations were in addition to the foreign internal defense and stability operations that the II Field Force headquarters controlled.

A. Analysis of the Elements of the Planning Function: visualizing, anticipating, forecasting, sequencing and adjusting.

General Westmoreland first visualized JUNCTION CITY in May 1966. II Field Force had just aborted a Unit of Action (brigade) air assault into *War Zone C*.[87] Lieutenant General Seaman was "to plan for an operation in War Zone C to start as soon as possible after the Christmas and New Year's stand-downs of 1966-1967." Told to think big, II Field Force headquarters developed a multiple division attack during conceptual-level planning.

General Seaman adjusted the JUNCTION CITY set of operations based upon the briefing of the USMACV J-2, in mid-December 1966. GASDEN was pushed to February 2, TUSCON to February 14, with JUNCTION CITY to follow in late February 1967. Seaman brought CEDAR FALLS forward in the sequence of operations planned for the first part of the year. It began on January 8, 1967, the original date for JUNCTION CITY.

OPERATION CEDAR FALLS made clearer the enemy situation. The JUNCTION CITY Phase One objective for decisive operations was the 9th Viet Cong Division, in the eastern portion of *War Zone C*.[88] New intelligence showed that elements of the 9th Viet Cong Division had moved westward. Adjustment planning for JUNCTION CITY shifted the Phase One decisive operation to the West.

Adjustment planning continued throughout JUNCTION CITY, with the II Field Force headquarters located at its tactical operations center in Dau Tieng.[89] In addition to extending the operation to a third phase, II Field Force Headquarters planners also adjusted functional and

[86] II Field Force, 20.
[87] Rogers, 71.
[88] II Field Force, 6.

detailed planning within the commitment-planning horizon. This included branch planning for both maneuver and sustainment operations.

A review of air operations indicates the magnitude of detailed adjustment planning that took place within the commitment-planning horizon of the Air Tasking Order cycle (seventy-two to ninety-six hours). Both Army aviation and Air Force Close Air Support and airlift were crucial to JUNCTION CITY tactical successes.

In Phase One, the operation used 249 helicopters in air assaults and the resupply of eight US infantry battalions. Over the duration of JUNCTION CITY, helicopters made 80,000 sorties with a total of 38,400 flight hours.[90] The Air Force flew 2,483 sorties and dropped 3,235 tons of ordnance on missions including Landing Zone preparation, convoy protection, preparation of objectives, and destruction of enemy troops and facilities. These included twenty-two B-52 strikes. II Field Force also used the three newly constructed C-130 airfields to support repositioning of forces within *War Zone C*.[91]

B. Analysis of the planning parameters.

In Vietnam, shaping operations often became decisive operations as engagements and battles developed. The operating environment kept detailed operations planning within a contingency-planning horizon at the Unit of Action echelon. USMACV J-5 undertook the analysis of tactics and strategy to develop multiple conceptual-level detail plans on an orientation-planning horizon. The Field Force headquarters did functional and detailed planning.[92] Communist re-infiltration and reoccupation resulted from USMACV's inability to retain control of areas because of the need to withdraw forces for stability operations. This

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[89] Rogers, 82.
[90] USMACV, 389, footnote 80.
[91] II Field Force, 11, 13-15.
[92] Westmoreland, 271, 284.

prompted General Westmoreland requirement that "subordinate commanders forecast their situations and possible operations at least six months ahead."[93]

The six-month forecasts were a mechanism for generating combat power capacity within determinate operational windows. USMACV collaborated with the Field Force headquarters to forecast combat power and sustainment requirements during functional planning within an orientation-planning horizon. This enabled adjustments in the sequence of "big unit" operations. Such was the case with JUNCTION CITY, for which Lieutenant General Seaman's command completed detailed planning in December 1966.

Functional and detailed planning had begun in late November. The mission assigned the planners of II Field Force, Vietnam, read:

> a. Phase I-On order, II FFORCEV in coordination and cooperation with the III ARVN corps conducts a major offensive into War Zone C (northern Tay Ninh Province) to destroy COSVN and VC/NVA forces and installations.
> b. Phase II-On order, II FFORCEV conducts coordinated airmobile and ground [assaults] in eastern War Zone C to destroy COSVN and VC/NVA forces and installations.[94]

A small team conducted the planning within the headquarters at Bien Hoa, and attempted to associate its preparations with the two planned deception operations. II Field Force published all three plans in early December 1966.[95]

C. Analysis of the relationships between the theoretical levels of military operations in the campaign.

General Westmoreland and USMACV did strategic-operational planning. Operational-tactical level planning was a function for which Westmoreland had designed the Field Force headquarters. Each Field Force staff reflected in size and composition the different operating environments of its assigned areas of operations. Expertise in all elements of the planning function was resident within the II Field Force headquarters. The amount of collaborative and

[93] Westmoreland, 271, 284.
[94] Rogers, 74.
[95] Rogers, 73.

parallel planning between command echelons—USMACV, II Field Force, and the Divisions—was that with which Army officers of the 1980s and 1990s were familiar.

D. Analysis of the concepts of operations and of logistical support.

An early concept of operations for JUNCTION CITY included airborne drops by a brigade of the 101st Airborne Division and the whole 173d Airborne Brigade.[96] It identified three objectives: "to engage the 9th Viet Cong Division and the 101st North Vietnamese Army Regiment; to destroy COSVN head-quarters; and to destroy enemy base camps." By December 1966, the 101st Airborne Division was no longer part of the concept of operations. In January 1967, the 173d S-3 and II Field Force planners planned a battalion-size drop.

The Unit of Employment could do detailed logistic planning and functional operations planning. Similar in scope and concept, II Field Force sustained CEDAR FALLS by using the combat power capacity and sustainment originally developed for JUNCTION CITY. By adjusting the generation of combat power capacity and sustainment planned for February 1967, the headquarters of these echelons met the requirements of the thirty-one maneuver battalions active in JUNCTION CITY.[97]

In a seventy-day operation that built around non-contiguous movements to contact and hasty attacks, the detail under-girding the concept of logistical support enabled the concept of operations to succeed. Consider the planning represented by the air supporting operations, and the logistical and maintenance effort their numbers imply (see p. 56). Planners at the Unit of Action, Unit of Employment, and higher headquarters echelons were continually adjusting their detailed planning in a commitment-planning horizon of thirty-six to seventy-two hours.

General Westmoreland fought a war of attrition without seeking to impose strategic-operational shock on the enemy. US policy excluded the option. The Field Force commanders did seek to impose operational-tactical shocks of sufficient duration to make stability operations

[96] Rogers, 72.
[97] II Field Force, 20.

effective. Despite the tactical mobility helicopters provided, USMACV lacked sufficient forces to convert tactical successes on the battlefield into operational progress in the second phase of the strategic campaign.

Historical study of US military operations in Vietnam has great value to those involved in the design of doctrine, organization, and materiel of the Objective Force. Large-scale operations like JUNCTION CITY were exceptional during the conflict. However, operations through out the 1966-1968 period exploited helicopter mobility to enable non-linear, non-contiguous operations throughout the battlespace. The Objective Force Concept aims at achieving in the strategic-operational realm the kind of flexibility in cycling Units of Action in simultaneous, distributed operations that characterized tactical operations in Vietnam.

CHAPTER FOUR

A SECOND LOOK AT PLANNING IN THE OBJECTIVE FORCE

I. Significant Insights

Lessons learned for planning in Units of Employment from the Analysis of Three Historical Military Operations.

Four insights for designing an effective distribution of the planning function arise from the historical analysis in the last chapter. These insights shape analysis of the implications for planning in the Objective Force Concept. They are also the basis of recommendations for the distribution of the planning function in Units of Employment.

The first insight involves propagating a commander's visualization through C2 echelons. Continuity of staff and continual collaboration between echelons throughout execution is the best means of rapidly developing a thorough corporate understanding that supports intent-centric execution. Contrast the performances of Crook and Terry during the Great Sioux War.

Crook's difficulties in execution arose from factors other than lack of corporate understanding. In contrast, Terry lacked Crook's thorough understanding. Terry was not part of the collaborative planning process that informed Sheridan's concept of operations for the campaign. This affected Terry's decisions during planning, preparation, and execution of operations by both himself and by Gibbon and Custer.

The second insight involves joint integration of effects through collaborative planning. WESERUEBUNG demanded cross-service collaboration for which German staff officers were unprepared by training and experience. Captain Kranke's OKW planning group was the key to success in planning the joint operation. As a liaison team within the Group XXI headquarters—the operational joint force headquarters during planning—its members networked together the service high commands and service operational commands assigned to the operation. Thus, the German military successfully integrated action across the services through the OKW planning group's efforts.

The third insight involves effective adjustment planning. Operational-tactical maneuver options arise out of sustainment operations. Both the Great Sioux War and OPERATION JUNCTION CITY provide illustration.

The concept of support for the Great Sioux War did not allow operational-tactical flexibility. Generating the combat power within the Division of the Missouri depended upon the inelastic volume of throughput over waterways. Crook relied on Terry's supply trains for sustainment during August 1876, and this overwhelmed the concept of logistics support and forced the termination of summer operations.

In contrast, the concept of logistics support in JUNCTION CITY provided II Field Force the flexibility to re-sequence CEDAR FALLS in its place. In the operational-tactical realm, the concept of logistics support provided tactical flexibility to the Units of Action conducting search and attack operations. The helicopters providing that tactical flexibility also provided the means for cycling formations in and out of combat.

The fourth insight involves the sustainment of non-contiguous, non-linear operations. Logistical support within the area of operations involves the tactical maneuver of sustainment forces. Alternatively, combat formations cycle out of the area of operations to secure support bases. JUNCTION CITY best illustrates the choice.

At the tactical level, small unit patrols operated from artillery fire-bases, cycling in and out of relative security to conduct search and attack missions. In the operational-tactical realm, aircraft provided flexibility in repositioning combat formations and brought logistics support into the area of operations. The forward support bases established during OPERATIONS GASDEN and TUSCON supported this.

Logistics came to these forward bases on secured routes. Nonetheless, guerrilla forces frequently ambushed supply convoys. While the air gave relative security en route, landing zones and landing strips required both air and ground tactical maneuver. Ground movement protracted

the tactical maneuver requirement. Supporting such operations makes constant operational maneuver demands on planning in Units of Employment.

II. Implications for planning

The planning function at the Unit of Employment echelon.

The US Army's November 8, 2001 white paper, "Concept for the Objective Force," is the latest statement of what the Army will become in the 21C. Its smaller, more deployable and capable units will enter a theater of operations ready to fight and fully synchronized with the joint force. The time standard from lift-off to joining a fight: ninety-six hours a brigade combat team, 120 hours for a division equivalent, and thirty days for five divisions.[98] These formations must be capable of preparing for impending operations as part of and integrated joint force while moving to the theater of operations.

Units of Employment must exercise adaptive dominance within a context of increasingly joint, multinational, and interagency operations. Those operations will take place in **expanded**, **non-linear**, and **multi-dimensional battlespaces** that include linkages between military and non-military factors that will combine to influence the accomplishment of military aims. As demonstrated on the ground in Afghanistan in OPERATION ENDURING FREEDOM, "[t]he Army must be capable of simultaneously conducting warfighting and stability operations and [of] transitioning [between them]…without any loss of momentum or operational focus."[99]

In his November 8, 2001 remarks to AUSA, the Chief of Staff of the Army emphasized that the Objective Force, at the operational level, must conduct operational maneuver over strategic distance without reliance on airports or seaports of entry. It must retain the capability to make forced entries at multiple locations. As well, it must conduct continuous operations so that it produces an overwhelming operational tempo.

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[98] Army White Paper, 9.
[99] Objective Force White Paper, 3; TRADOC PAM 525-3-0, 33.

General Shinseki also noted that the continuous, non-contiguous, and non-linear characteristics of the envisioned offensive operations against mobile, lethal, and fleet enemy formations presents a challenge to the current "plan-centric" doctrinal model. The Objective Force Concept White Paper addresses this same issue by arguing that tactical decision-making must change "from plan-centric to intent-centric operations…."[100]

Accomplishing the envisioned overwhelming operational tempo requires a principle such as Huba Was de Czege's *adaptive execution*, which involves "adaptation to emerging situations in advance through preparation and understanding." Having it depends upon reliable networking among dispersed organizations so that the force can perform distributed, cooperative operations. Implicit in *adaptive execution* is a concept of *adaptive planning* that will support the execution of *intent-centric* operations.[101]

The term *plan-centric* refers to the detail-oriented planning process embodied in the current *Military Decision-Making Process*, and to a damaging over-identification with assigned tasks during execution in cases where the detail-oriented plan no longer suits the circumstances. The envisioned operational tempo demands increased agility in decision-making. This depends upon the speed with which commanders and their staffs can re-visualize the on-going operation and complete adjustment planning.

The ramifications of two design goals within the Objective Force Concept intended to provide that speed bear directly on the distribution of the planning function: the **Common Operating Picture** (COP) and **common understanding of the situation**. The **Common Operating Picture** , which seeks to bring the entire scope of an operation back within commanders' field of view, is instrumental in producing a **common understanding of the situation**. This is not immediate because of differences in experiences and perspectives among

[100] Objective Force White Paper, *iii*.

[101] Huba Wass deCzege, "New Paradigm Tactics and Tactical Organizations: How to Think About Designing and Fighting the Future Combat System," Unpublished paper: 2001, 28; Richard E. Simpkin,

persons. The term ***corporate understanding*** conveys the commonality of perspective that planning ideally produces.

Commanders and their staffs share a corporate understanding within and between echelons, so that they can work in concert to direct **action** toward the **aim**. The content of the corporate understanding is the **visualization** of the set of actions that produce effects adding up to the desired end-state: the **aim**. The visualization belongs to the commanders by authority, responsibility, and tradition, but the visualization itself arises in the dynamic of planning by both staffs and commanders. They combine in imagination the resources, actions, effects sought, and conditions producing the desired end-state.

The visualization of the operation also moves the continuous, iterative activity of planning. The unfolding situation prompts adjustment planning, which begins with re-visualization. Successful transformation to intent-centric operations could increase the amount of planning a Unit of Action must have the capacity to perform.

An inherent planning capacity resides within headquarters at any echelon. This capacity is a combination of experience, ability, and staff size. Staffs expend their planning capacity during planning activity and must regenerate it. Sustaining planning capacity over time requires leadership and maintenance of the planning team and its systems. The Objective Force Concept, with its emphasis on cycling combat power and maintaining continuous pressure, requires that Units of Employment possess sufficient capacity to do three planning tasks.[102]

In the first planning task, planning teams must adjust plans for on-going operations in light of unfolding events. This involves redirecting activity planned for the immediate future. Adjustments to a concept of operations in execution tightly link to the combat power that available air-ground tactical mobility and the present concept of logistics support can provide within a window of opportunity.

Race to the Swift: Thoughts on Twenty-First Century Warfare (London: Brassey's Defence Publishers Ltd, 1985), 223.

Planning teams can adjust the concept of logistics support as well as the concept of operations as the window of opportunity they are planning for moves further into the future. This is the work involved in the second planning task. The planning team must adjust and refine plans for immediate follow-on operations.

As the planning team moves its efforts beyond the horizon of a sequel exploiting current options, it begins the work involved in the third planning task. This is a further window of opportunity where future action can alter current options or create new options. Here, planning teams develop plans for further military operations in pursuit of campaign objectives.

At the Unit of Employment level, the **strategic-operational** dynamic in execution will remain a complex, interrelated set of events and activities in which factors of distances and capacities will keep the duration of sustaining operations at weeks and months. Likewise, those factors of distances and capacities will keep the duration of Unit of Employment maneuver activity constituting shaping and decisive operations at days and weeks. Within the Unit of Employment **operational-tactical** execution dynamic, threats and opportunities will appear and disappear inside windows of opportunity too rapidly to allow development of the detailed planning now present in a commitment-planning horizon.

III. Design considerations

Distribution of the planning function in the Objective Force Unit of Employment.

Planning in time to do something useful toward gaining the wanted operational effects and strategic endstates will require a different doctrinal methodology for military planning. Nonetheless, **anticipating** and **forecasting** will remain the mechanisms detecting these emerging threats and opportunities, through planning.[103] In effect, the **orientation-planning horizon** will become the norm of plan development, in place of the current standard of detailed planning within a **commitment-planning horizon** for the shaping and decisive operations of maneuver

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[102] Army White Paper, 12.
[103] FM 5-0, par. 1-15, 1-70, and 1-75; par. 1-26, 1-7.

formations. **Conceptual planning** for maneuver and **functional planning** for sustainment within a **contingency-planning horizon** will become the development limit for planning operations.

The requirement for Units of Employment to have the capability to function as a Joint Task Force headquarters will frequently introduce non-military considerations into planning at this echelon. The potential for strategic effects arising out of tactical actions makes anticipating non-military effects a capability that must be available to Units of Employment.[104] The commanders and staffs of Units of Employment must also have the capability to anticipate accurately the effects of non-resident military capabilities complementing those of Objective Force formations.

Thus, the organization of Units of Employment must facilitate the integration of non-US Army elements into both execution and planning. Those non-US Army elements will typically include joint, interagency, and multinational units and formations. Planning capability must be **joint-by-design** so that Units of Employment can integrate into a Joint Force Command's on-going operations as the Army Force of a Land Component, or function as an independent or subordinate joint-level headquarters. Virtual rehearsals for intent-centric operations, performed by deploying Units of Employment, will require rapid and early joint, multinational, and inter-agency planning collaboration.[105]

Web-based networked collaboration implies a materiel potential for such planning. This would effectively expand the planning capacity of Units of Employment above assigned personnel without increasing the deployed headquarters footprint. Virtual staff would be available to collaborate on functional planning for committed Units of Action and provide the non-US Army planning capability required for fully integrated operations.

Supporting commanders in bringing a current operation to endstate may fully engage the capacity of organic Unit of Employment planning teams. With collaboration, higher headquarters

[104] Army White Paper, 4.
[105] Army White Paper, 15.

could distribute conceptual-level and functional-level planning to uncommitted Units of Employment headquarters.[106] Web-based networking in the Objective Force should allow global distribution of such planning.

The Common Operating Picture should provide immediate visibility on combat operations and provide detailed statuses for the logistics support system. Thus, a Unit of Employment planning team in the US could support a Unit of Employment in the opposite hemisphere with branch planning at the functional-level for maneuver and the detailed-level for sustainment.

Distributing the orientation-planning horizon's conceptual-level and functional-level planning to uncommitted Unit of Employment planning teams also allows the rapid development of plans for further operations. This planning would furnish the committed Unit of Employment and higher headquarters with a scope of the duration, forces, and resources required for the next step(s) in a campaign.

Four models for transforming aim into action arise. The monograph author recommends the fourth model. The Army should seek effective combinations in experimentation.

In the first model, planning can be a function largely separate from execution. A planning team hands over its output to an operations team. The commander and chief of staff become the critical links, ensuring both that planning stays relevant to unfolding events and that the operations team achieves a corporate understanding of the plan.

In the second model, multiple planning and execution teams can cycle from planning and preparation through execution to endstate. While one team provides control in executing its planning for an operation other teams conduct planning and preparation for future operations. Teams doing conceptual-level planning on an orientation-planning horizon could provide

[106] General (Retired).Frederick Franks warns that such collaboration from outside an operational area should have restricted input, such as fully executable courses of action that commanders on the ground have their staffs develop for execution. Interview with monograph author (Fort Leavenworth, Kansas: School of Advanced Military Studies, CGSC, February 11, 2002).

additional planning capacity to teams engaged in execution. Providing direct or general support reinforcing planning capacity to adjust branches or sequels would enhance corporate understanding of the strategic-operational situation with which the planning and execution teams are working.

In the third model, the bulk of a planning team may consist of the command element of subordinate echelons. In this model, echelons and formations committed to an operation would cycle out of action upon achieving endstate in an operation. The web-based, distributed and networked features of the Objective Force would make this possible. Non-contiguous operations would limit the requirements for reliefs in place and passages of lines. Networked C2 would enable collaboration from geographically remote locations. The time needed for both planning and forming corporate understanding would decrease.

In the fourth model, planning and execution involve some combination of the second and third models. A combination of the first and third models is also feasible. The model selected must enhance commander's freedom of action through planning concepts of operation and concepts of logistics support in satisfactory detail. It must also provide a C2 system with access to sufficient planning capacity to retain the initiative in the face of unfolding events and to quickly transition to functioning as a joint-level headquarters.

The recommended solution is a model four combination of models one and three where Unit of Employment C4ISR force packages cycle from planning to future operations to current operations. Such force packages would consist of many similar planning modules. A higher headquarters would generate needed strategic-operational planning capacity for any project or operation by linking planning modules. The higher headquarters would have planning module sockets into which it routinely plugs Unit of Employment planning modules. The planning modules would collaborate in designing campaign plans and major operations in cooperation with counterpart modules from sister services, coalition forces, and other agencies.

Within the execution of a campaign, the planning modules of a Unit of Employment C4ISR force package would be distributed to cycle through the command and control of planning, preparing, and executing major operations. Some modules would be planning future operations. Others would exercise command and control over preparation and execution of current operations. Still others would provide liaison and adjustment planning conduits between modules commanding and controlling execution and the higher headquarters. Those modules providing liaison and adjustment planning would also provide the flexibility needed for a Unit of Employment echelon to function as a Joint Task Force, Joint Forces Land Component Commander, or Army Forces headquarters. It would reach out from within the higher headquarters, organizing and linking together a network with the necessary planning capacity.

The planning modules of the C4ISR force packages would be Joint by design. For example, a module might consist of ten personnel: four land component planners (Army and Marines), three air component planners (Air Force), and three maritime component planners (Navy and Marines). An officer of sufficient rank and experience to be chief of staff, for either a Deputy Joint Force Commander or Joint Forces Land Component Commander, would lead a module. The land, air, and maritime components would have combined arms and sustainment systems experts. The land component would also include an intelligence systems expert. The air and maritime components would include air and space warfare systems experts.

On the operational-tactical side, the Unit of Employment C4ISR force packages would be the frameworks linking together the Army formations required for a military operation. They would also be platforms with the inherent means to assume responsibilities as a Joint Task Force, Joint Forces Land Component Command, or Army Forces headquarters by serving as a networking hub for command and control functions.

The Unit of Employment C4ISR force package planning modules would have a dual purpose. The first would be in supporting the higher headquarters in the design of military campaigns in the strategic-operational realm. The second would be in designing the major

operations within a military campaign in the operational-tactical realm. The focus of the planning modules would be shaping and decisive operations. The higher headquarters would do the detailed planning for both deployment and sustainment, based upon the conceptual-level detail provided by Unit of Employment C4ISR force package planning modules.

Planning modules would incorporate available subordinate Unit of Action command elements of any allocated formations. Alternatively, it would incorporate similar Unit of Action command elements. That would eliminate any separate Unit of Action planning burden through tactically sound collaborative planning that enables intent-centric execution.

The planning modules would have a war-fighting training focus and combine with other force package modules that would provide the communications and intelligence architecture and other functions of command and control.

CONCLUSION: FEATHERS IN THE WARBONNET

Providing effective C2 to precision force package formations performing military activities within a global theater of operations is an essential feature of the Objective Force transformation. Doctrine, organization, and materiel requirements will reflect the Army's decision on the distribution of the planning function in the Unit of Employment. The design recommendations for distributing the planning function in Units of Employment outlined above are a starting point for further study.

In fulfilling their varied strategic, operational, and tactical purposes, Units of Employment headquarters must combine robust planning capacity with a small footprint in the theater of operations. The continuing elaboration of military headquarters into over-towering headpieces prompts the war bonnet metaphor used in the monograph title. The members of the general staff, supporting, and administrative personnel within a flag-level headquarters are like feathers in a war bonnet. Incremental adaptations of current headquarters structures and general staff organizations will be a sub-optimal solution that only adds feathers to the war bonnet. A

practical experimental model for distribution of the planning function in Units of Employment provides direction for materiel and systems developments.

The Objective Force Concept implies the requirement for adaptive planning that will support the execution of intent-centric operations. As part of the body of work called for in the "Concept for the Objective Force," this monograph has analyzed the planning function in **the strategic-operational relationship** between a Unit of Employment and its higher headquarters. [107] It establishes parameters for determining both the optimal distribution of the **planning function** between Objective Force echelons and for designing planning methods that generate *adaptive dominance*. This monograph also provides the groundwork for further study, analysis, and experimentation in the design of Unit of Employment headquarters.

[107] Army White Paper, 17.

APPENDIX 1: Time-Space Compression

The Commander's Subjective Battlespace Visualization

The planning function has become more difficult. Increasing technological complexity has compelled both an objective loss of time in the *understanding-directing* gap where planning happens and a subjective compression & distortion of time and space. Simpkin illustrates this problem as it existed for the Soviet military in 1976.

The concept of *simultaneity* needs the same elasticity of use granted the concept of *surprise*. Operationally, a force achieves surprise when an opponent cannot react effectively, though aware of the friendly action. Likewise, operationally simultaneous actions fall within that period when an opponent cannot coordinate a coherent response, and there are only localized reactions. Thus, *simultaneity* is a relative product of mobility and communications. In June of 1876, the Sioux tribes achieved both operational surprise and simultaneity against US Army Units of Employment executing distributed and non-contiguous maneuver.

I. Time-space compression and distortion arises in disproportionate speed in strategic-operational mobility and operational-tactical mobility, and in the shaping effects of the railroad and telegraph on operations.

Disproportion between mobility and communications distorts and compresses the space-time geography of a visualized battlespace. Before the steam engine and wire-telegraph, mobility and communications had proportionally matched speeds.[108] Messages moved over strategic-operational distances at the rate of the horses or ships carrying them. Steam and wire telegraph introduced a disproportion between strategic-operational mobility and communications and operational-tactical mobility and communications.

Disproportion between strategic-operational and operational-tactical mobility remakes the distances between places in a visualized battlespace. Akin to the distorted depiction of littorals in sea charts from the Age of Discovery, the terrain and distances in the geography of a

[108] This statement is true, if one accepts the premise of excluding unreliable long-range visual signal systems such as the 18C optical telegraph.

visualized battlespace takes on the proportions experienced in living under the function of time. In those distorted images that projected the spherical onto the flat, chart makers stretched coastlines wide to show details of harbors, ports, and waterways, and compressed inland areas down to vagueness on the map-sheet.[109]

II. The impact of technological infrastructure on Sheridan's visualization of the battlespace.

In 19C America, the duration of a coast to coast trip across land shrank from over twelve months to less than a week, upon completion of the Union Pacific and Central Pacific railway in 1869. The US Army fully supported western railroad building because rail gave a small Army with an enormous area of responsibility operational maneuver over strategic distances. Rail also provided high-capacity logistics throughput at a bargain price. The reach of steamboats on the waters of the Missouri River valley supplemented the operational reach and throughput capacity of the railroads.

In 1876, the railroad infrastructure within the Division of the Missouri was useful in the strategic repositioning of units to reinforce garrisons and free up troops for the campaign, but not sufficiently mature to directly support its offensive operations. Away from the railroad depots and the river landings, wagons, pack mules, and horses dictated the mobility of maneuver and sustainment, and they dictated the speed of communications, too.[110] Away from the rails and water was also away from the telegraph lines. Thirty miles was a day's travel for a horse-mounted column and its supply trains of wagons and mules. Sixty miles in a day was good for a courier, having to find a path through hostile territory. In comparison, a train traveled 300 miles in a day, and the speed of a telegraph message's travel from sender to receiver was determined by the number of letters in it.

III. The addition of motorized vehicles, airplanes, and radio reshape operation. The time-space compression and distortion in visualizing this 20C campaign involves a

[109] Daniel J. Boorstin, *The Discoverers: A History of Man's Search to Know His World and Himself* (New York: Vintage Books, Random House, 1983, 267-274.

[110] Gray, 128.

better match between strategic speed and tactical speed. However, the air, sea, and land components of the campaign introduces its own set of difficulties.

Motorized vehicles, airplanes, and radios all saw their first use in war during 1914 to 1918. The Germans used the Spanish Civil War and the invasion of Poland to combine effectively these technologies with penetration tactics to accomplish the operational-tactical successes that had eluded Ludendorf's 1918 Spring Offensive. The speed of mechanization and radio matched the dynamics of the operational-tactical realm to the changes in the dynamics of the strategic-operational realm brought about sixty years before by the speed of railroad, telegraph and telephone. German practice and doctrine were sufficient, in April 1940, for the effective use of these instruments during the invasion of Norway and occupation of Denmark.

IV. The impact of technological infrastructure on Falkenhorst's visualization of the battlespace.

However, the need for a joint air-land-sea operation fell outside the traditional German conception of war-fighting. General Falkenhorst received command based upon his unique qualification of having participated in an amphibious landing, once. The critical elements of his visualization of the battlespace, first carried out over a commercial road map, were the ranges of German Air Force aircraft, the speed of Navy ships, plus the size and disposition of Norway's military formations. Knowing these, he could evaluate the forces needed; the size of airfields required, the essential port capacities, throughputs, and shipping needed; and determine the rail and road demands that delivering an operational shock would require.

Foreseeing that the simultaneous assaults in Norway would expend his span of command, Falkenhorst placed executing the occupation of Denmark under a separate span of command. He only took it within his operational control at W+3.[111]

V. Time-space compression and distortion alters again with the jet and the helicopter.

[111] Taylor, 4.

As a young man traveling to West Point, riding a steam train at eighteen miles per hour, Ulysses S. Grant had the sense that modern transport was annihilating space.[112] 130 years later, the radio, helicopter, and jet aircraft prompted General Westmoreland to address, in ways similar to Sheridan, the challenges of too few troops. He had to occupy and control an operational area against an enemy that preferred to slip away into areas of sanctuary when it did not have an overwhelming advantage.

Westmoreland placed his divisions in semi-permanent base camps and deployed brigades and battalions within non-contiguous, but mutually supporting, zones where they performed tactical operations from artillery fire bases. He shuffled battalions and brigades within and between zones and Vietnamese corps areas of operations, using the helicopter to stretch his combat power. "[T]he very existence of large enemy units made it essential that American troops be prepared on short notice to drop what they were doing [—foreign internal defense and stability operations—] and move against a developing big unit threat."[113]

VI. The impact of technological infrastructure on visualization of the battlespace.

Westmoreland came to visualize the battlespace using the helicopter maneuver of battalions. Battalions were the conceptual building blocks out of which he built formations and determined command and control echelons.[114] His belief in the understanding of the situation he gained through his command, control, communications, intelligence, surveillance, and reconnaissance system led him to make final decisions "only at the last minute lest conditions should change." This had included his 1965 choice to base the 1st Cavalry Division at An Khe and to launch its troops from the Qui Nhon port hours after their reception—such that their deployment became equivalent to their integration and employment.[115]

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[112] Ulysses S. Grant, *Personal Memoirs of U.S. Grant*, volume I; available from http://home.nycap.rr.com/history/grant1.html#Ch-2; Internet; accessed 01/25/02.

[113] Westmoreland, 147.

[114] Ibid., 140-141.

[115] Ibid., 156.

During Phase One of the "big unit strategy," the US Army refined the "search and destroy" model of operational-tactical offensive operations. In Phase Two, the methodology of offensive operations involved three steps. Step one involved search and destroy operations by US forces tasked to "locate, bring to battle, and then destroy or neutralize large NVA and VC units."[116] Step two used South Vietnamese forces to follow on after the search, destroy action, and clear the zone or area of guerrillas. Step three then involved the South Vietnamese forces in conducting security operations to enable pacification.

General Westmoreland used the helicopter to maintain his visualization of the battlefield. His standard practice was to visit his field commanders at their headquarters, and he exercised his prerogative to light on any echelon within his command. "If orders or suggestions emerged," when he made such visits, "the subordinate command had the responsibility of notifying the next higher echelon of command."[117] Westmoreland was unaware of the influence this reach-through habit had on subordinate commanders. Thus, he asserts, "I tried to be flexible with the plans and afford leeway to the local commander."[118]

So, he flew to the II Field Force Headquarters at Bien Hoa, giving Lieutenant General Seaman USMACV J-2's intelligence assessment that the Viet Cong regional headquarters was definitely in the Iron Triangle (*War Zone D*). It was Seaman's decision to override the argument of the Commander, 1st Infantry Division and push OPERATION CEDAR FALLS ahead of JUNCTION CITY. In his telling, General Westmoreland emphasizes that rather than back his old J-3, Major General Depuy, he gave Seaman the leeway to alter the sequence of these operations.

[116] Zaffiri, 162.
[117] Westmoreland, 270.
[118] Ibid., 272.

APPENDIX 2: A MODEL FOR PLANNING IN THE OBJECTIVE FORCE

Planning is the forethought and preparation necessary to enable timely action in complex activities, especially those with a high degree of interrelatedness and requiring time consuming effort to bring about an intended result.

1. Problem Analysis ~ Mission Analysis
   - Opponent's Perspective:
   - How he sees himself—**Aim**, *centers of gravity*, *critical capabilities*, *critical requirements*, *critical vulnerabilities*
   - How he sees us-- **Aim**, *centers of gravity*, *critical capabilities*, *critical requirements*, *critical vulnerabilities*
   - METTT-C **.** É**.** Scheme of Maneuver & Scheme of Support
     - Geography—topography, ethnography, socio-cultural factors and world-view(s)
     - ***Conditions*** required É ***effects*** sought **.** É**.** formations [maneuver] & echelons [C2]

   - Our Perspective:
   - How we see ourselves—**Aim**, *centers of gravity*, *critical capabilities*, *critical requirements*, *critical vulnerabilities*
   - How we see the opponent-- **Aim**, *centers of gravity*, *critical capabilities*, *critical requirements*, *critical vulnerabilities*

2. Problem Solving ~ Planning Action

   - METTT-C **.** É**.** Scheme of Maneuver & Scheme of Support
     - Geography—topography, ethnography, socio-cultural factors and world-view(s)
     - ***Conditions*** required É ***effects*** sought **.** É**.** formations [maneuver] & echelons [C2]
       - ***Conditions*** for end state arise from the ***effects*** of **decisive operations**, which result from the ***action*** of formations and their supporting systems
       - ***Conditions*** for decisive operations arise from the ***effects*** of **shaping operations**, which result from the ***action*** of formations and their supporting systems
       - Sustainment requirements are a sub-set of the ***conditions*** for **decisive** and **shaping** operations, met by the ***effects*** of **sustaining operations** resulting from the ***action*** of support formations and activities
       - **Sustaining operations** thus are the foundation of **decisive** and **shaping operations**. As a result, **sustaining operations** both precede and run concurrent with them
     - The sum of time required for decisive and shaping operations to fully realize their results makes up the ***duration*** of an operation

Operational-Tactical Design of Operations

The Military Decision-Making Process (MDMP) is the current US Army model for deliberate planning and decision-making at and above the battalion echelon. Division and Corps staff officers have adapted briefing norms and presentation formats evolved from battalion and brigade-level mission planning. This planning produced operations orders and briefings with tactical detail appropriate to fighting Soviet formations within a commitment-planning horizon of seventy-two to ninety-six hours. At the division level, what the situation will be on D+11 or how an adversary will behave on D+13 lies within the orientation-planning horizon.

Frequently, division and corps planners incorporate in their Course of Action Decision briefings the pretended certainty of MDMP war-game tactical schemes of maneuver. The customs and traditions of the deliberate MDMP guarantee the commander and primary staff's frequent exposure to those tactical details. Presenting such a detailed, mechanistic scheme of maneuver through days and weeks of a projected operation forms imperceptibly an expectation about an opponent's behavior based upon an anticipated situation. As the actual situation unfolds, those expectations become a map or script that masks new opportunities or contributes to misapprehending the true circumstances of the situation.

War-gaming is the MDMP equivalent of the *leader's reconnaissance* in the Troop Leading Procedures. The complexity, duration, and distances commonly involved in military operations above the company level preclude a physical reconnaissance. Thus, war-gaming substitutes for visualizing an operation by mentally superimposing a scheme of maneuver onto the actual terrain within one's field of view, or conforming one's intended activities to the actual unfolding of events within the scope of one's awareness.

Analyzing courses of action through war-gaming at the division and corps-level provides a reliable forecast of combat power and sustainment required for fighting and winning a major operation. War-gaming provides staffs estimates of an operation's likely duration and the build-up of forces and sustainment necessary for its successful execution. It also provides them an

estimate of when operational tempo and battle will erode formations' combat effectiveness. From this set of estimates, staffs can timeline surges of combat power capabilities and meter the flow of forces and sustainment.

In general terms, planning teams may better serve their commanders by focusing on the options and opportunities that circumstances in the theater—the capacity of surface ports and availability of lift—will allow. This author offers the following alternative to the normal presentation of war-game results.

> The staff war-gamed three courses of action against a four-brigade enemy force conducting defensive operations to politically retain terrain by destroying a coalition brigade. The duration of offensive operations will be fourteen to seventeen days, resulting in the destruction of this enemy force and defeat of the opponent's offensive capability. Achieving this aim will require a Unit of Employment consisting of eight brigade-size maneuver formations with the support of joint combat power and enablers. The Unit of Employment area of operations exceeds 204,000 Km^2. On average, its combat formations will traverse 350 Km. Of that, 225 Km will include tactical movements against likely enemy contact. Additionally, the Unit of Employment must coordinate Stability and Support Operations and Civil-Military control for up to 10,000 Displaced Persons and Refugees (DPREs) on D-Day. The number of DPREs may increase to 130,000 by D+3, up to a potential maximum of 800,000 between D+8 and D+12. The war-gaming indicates that Unit of Employment Civil-Military and Stability and Support Operations will continue through D+45 to D+60.
>
> The staff determined the following through its Course of Action analyses:
>
> 1. The anticipated duration of *decisive* operations, plus the forecast of logistical requirements for them.
> 2. The anticipated duration of *shaping* operations, plus the forecast of logistical requirements for them.
> 3. The forecast duration of the build-up of combat power and logistics for *decisive* operations.
> 4. The forecast duration of the build-up of combat power and logistics for *shaping* operations.
> 5. The forecast requirements for *sustaining* operations to support Combat and Stability and Support Operations.
> 6. The formations and levels of combat effectiveness necessary to begin *decisive* operations—
>   - Maneuver forces and capabilities
>   - Sustainment forces and capabilities (Combat and SASO)
>   - SASO forces and capabilities
>   - C4ISR structure and capabilities
>   - JOINT enablers and combat power multipliers
>   - Days of Supply ON-HAND (Classes I through IX)
>   - Disposition of logistics support within Joint Area of Operations and Unit of Employment Area of Responsibility/Operations

- Minimum required volume of logistics and materiel IN-TRANSIT and Required Supply Rate

7. Earliest potential date to initiate *decisive* operations, based upon (1) likely, and (2) best availability of air and surface lift.
8. The formations and levels of combat effectiveness necessary to begin *shaping* operations—
    - Maneuver forces and capabilities
    - Sustainment forces and capabilities (Combat and SASO)
    - SASO forces and capabilities
    - C4ISR structure and capabilities
    - JOINT enablers and combat power multipliers
    - Days of Supply ON-HAND (Classes I through IX)
    - Disposition of logistics support within Joint Area of Operations and Unit of Employment Area of Responsibility/Operations
    - Minimum required volume of logistics and materiel IN-TRANSIT and Required Supply Rate
9. Earliest potential date to initiate *shaping* operations, based upon (1) likely, and (2) best availability of air and surface lift.
10. The formations and levels of combat effectiveness necessary to begin SASO—
    - Maneuver forces and capabilities
    - Sustainment forces and capabilities (Combat and SASO)
    - SASO forces and capabilities
    - C4ISR structure and capabilities
    - JOINT enablers and combat power multipliers
    - Days of Supply ON-HAND (Classes I through IX)
    - Disposition of logistics support within Joint Area of Operations and Unit of Employment Area of Responsibility/Operations
    - Minimum required volume of logistics and materiel IN-TRANSIT and Required Supply Rate
11. Earliest potential date to initiate SASO, based upon (1) likely, and (2) best availability of air and surface lift.
12. The figures on the following page depict capabilities over time—

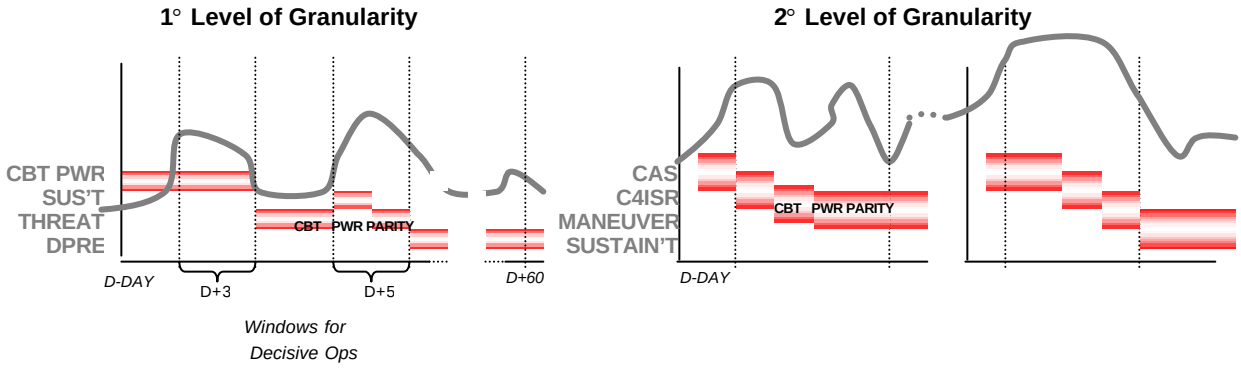

Figure 5 ***Windows of Opportunity***

The capacity for action is periodic, and bounded by windows of opportunity. Building up troops, materiel, and resources takes time. Protection is a requirement both for concentrations of troops, formations, activities, and information at nodes and for their transiting the links between nodes—either in singletons or in packets. Offensive operations are possible when the capacity for action lies in the volume above combat power parity, and the degree of disparity determines the magnitude of freedom of action. Defensive operations are necessary when the capacity for action lies in the volume banded by combat power parity. Culmination lies in volume below the threshold of combat power parity.

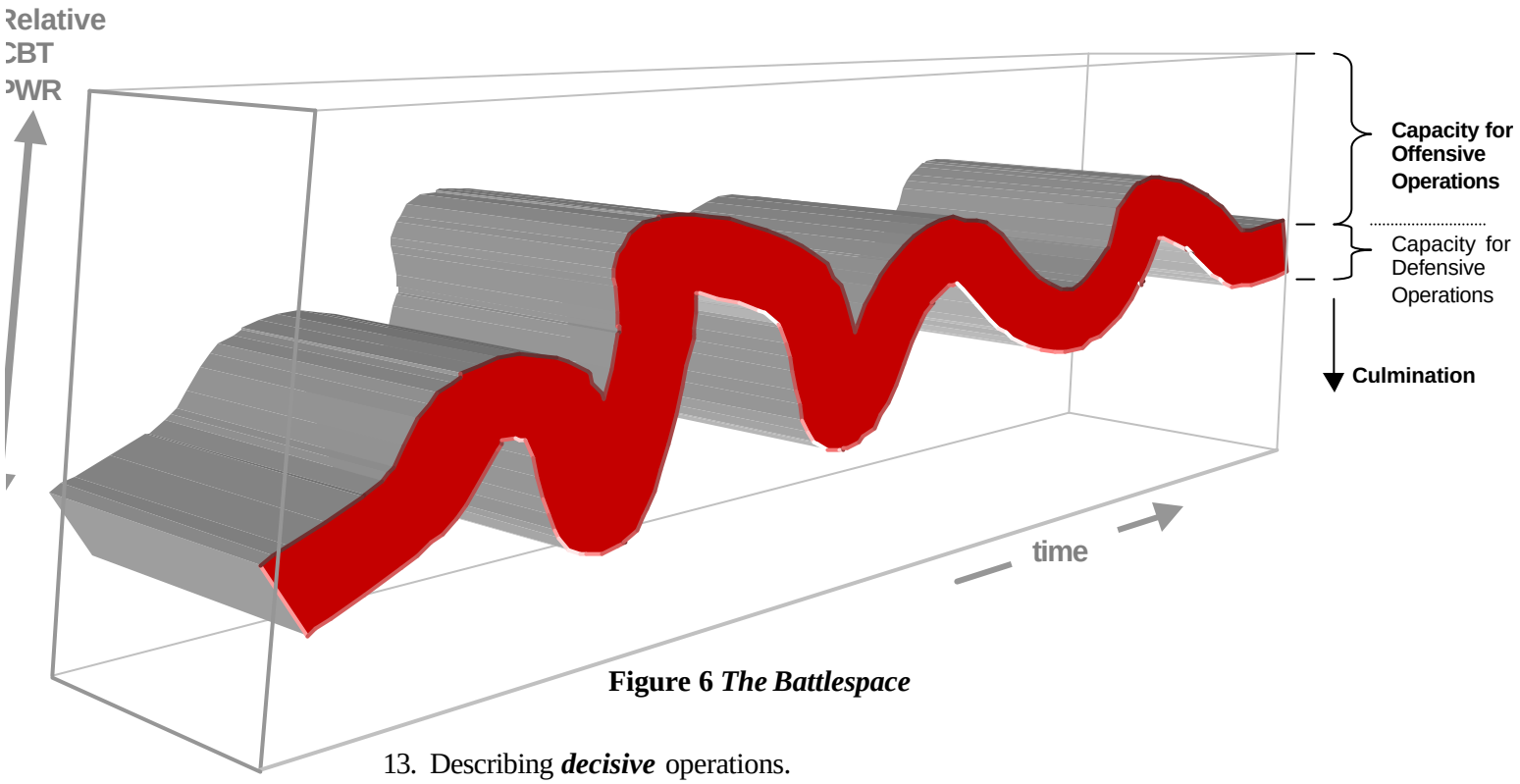

Figure 6 ***The Battlespace***

13. Describing ***decisive*** operations.

- The following is the condition set for initiating *decisive* operations.
  - ❑ $Condition_1$, established by $effect_a + effect_b$, created by unit mission…
  - ❑ $Condition_2$, established by $effect_c + effect_d$, created by unit mission…
  - ❑ $Condition_3$, established by $effect_e + effect_f$, created by unit mission…
- Written narrative conceptual plan for maneuver and fires.
- Tactical decision points: opposition action, with linked PIR-FFIR-EFFI and friendly action: *main effort*, fires, *supporting efforts*, plus ***sustainment*** priority of support and effort
- COA sketch, drawn with distances and formation footprints to scale, and showing anticipated opposition maneuver decision graphics and friendly maneuver decision graphics and control measures.

14. Describing ***shaping*** operations.

- The following is the condition set for initiating *shaping* operations.
  - ❑ $Condition_4$, established by $effect_m + effect_n$, created by unit mission…
  - ❑ $Condition_5$, established by $effect_o + effect_p$, created by unit mission…
  - ❑ $Condition_6$, established by $effect_r + effect_s$, created by unit mission…
- Written narrative conceptual plan for maneuver and fires.
- Tactical decision points: opposition action, with linked PIR-FFIR-EFFI and friendly action: *main effort*, fires, *supporting efforts*, plus ***sustainment*** priority of support and effort
- COA sketch, drawn with distances and formation footprints to scale, and showing anticipated opposition maneuver decision graphics and friendly maneuver decision graphics and control measures.

15. ***Sustainment*** operations.

- The following is the condition set for initiating *shaping* operations.
  - $Condition_{10}$, established by $effect_{m} + effect_{v}$, created by unit mission…
  - $Condition_{11}$, established by $effect_{o} + effect_{p}$, created by unit mission…
  - $Condition_{6}$, established by $effect_{w} + effect_{t}$, created by unit mission…
- Written narrative conceptual plan for maneuver and fires.
- COA sketch, drawn with distances and formation footprints to scale, and showing anticipated friendly maneuver graphics and control measures.

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